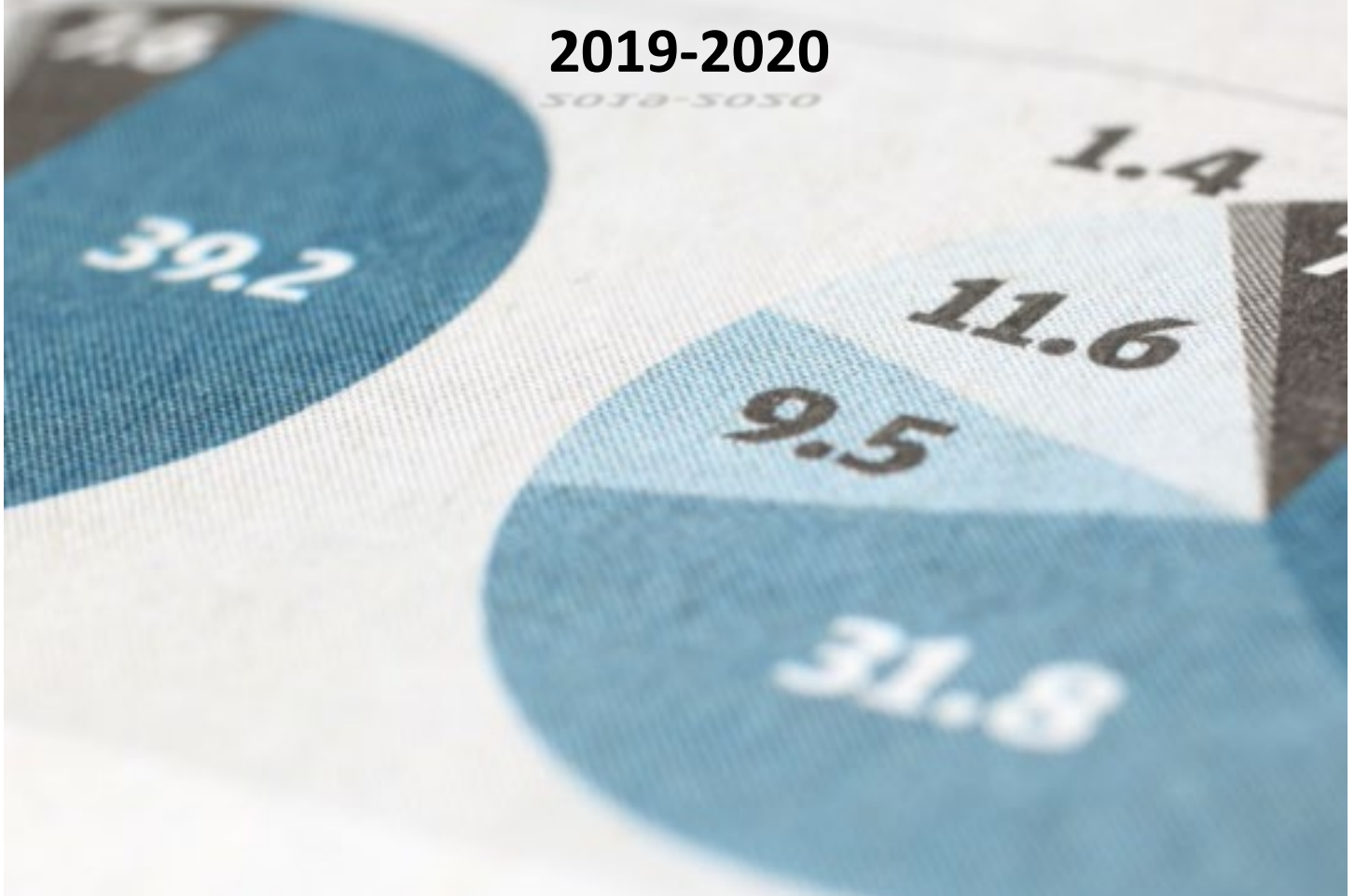


ELKS Report

Information on the Oral Health of Individuals with Intellectual/Development Disabilities

2019-2020



Missouri DHSS

Office of Dental Health

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INTRODUCTION

The Elks Report: *Information on the Oral Health of Individuals with*

Intellectual/Development Disabilities was created with data received through the Elks Mobile Dental Unit which is administrated by the Truman Medical Center and works in cooperation with the Jackson County Health Department, the Missouri Elks Benevolent Trust and the Missouri Department of Health and Senior Services to provide oral health preventive services to the special health care needs population and Missourians with seriously neglected dental problems. This program has staff and mobile dental units that travel between sites in Missouri to serve this population. The data was received from the Elks Mobile Dental Unit patients with funding received from the Centers for Disease Control and Prevention. According to a report from Cornell University published in 2018, there were nearly 869,000 Missourians with an Intellectual/Developmental Disability¹, so the data in this report was received from a very small percentage of this population. Sample data gathered and analyzed to create this report serves as a glimpse to the information and should not be viewed as an exact picture of the oral health of this population in Missouri.

ELKS DATA-ONE PAGE REPORT

Missouri Data for the year 2019 and 2020				
Conditions/Years	Number of Patients		Percentage of Patients	
	2019	2020	2019	2020
Oral Hygiene Satisfactory	194	139	45%	50%
Oral Hygiene Not Satisfactory	232	141	54%	50%
History of Rampant Yes	231	136	54%	49%
History of Rampant No	191	143	45%	51%
Untreated Decay Yes	166	97	39%	35%
Untreated Decay No	255	183	60%	65%
Treated Decay Yes	348	229	81%	82%
Treated Decay No	76	51	18%	18%
Urgent Care Needed	424	280	99%	100%
Sealants Yes	4	2	1%	1%
Sealants No	421	278	98%	99%
Total Number of Patients Screened	428	280	100%	100%

Note: 'Number of Patients' figures are filtered out for 'Not Specified/Unknown' datasets while, Total Number of Patients Screened does include 'Not Specified/Unknown' fields.

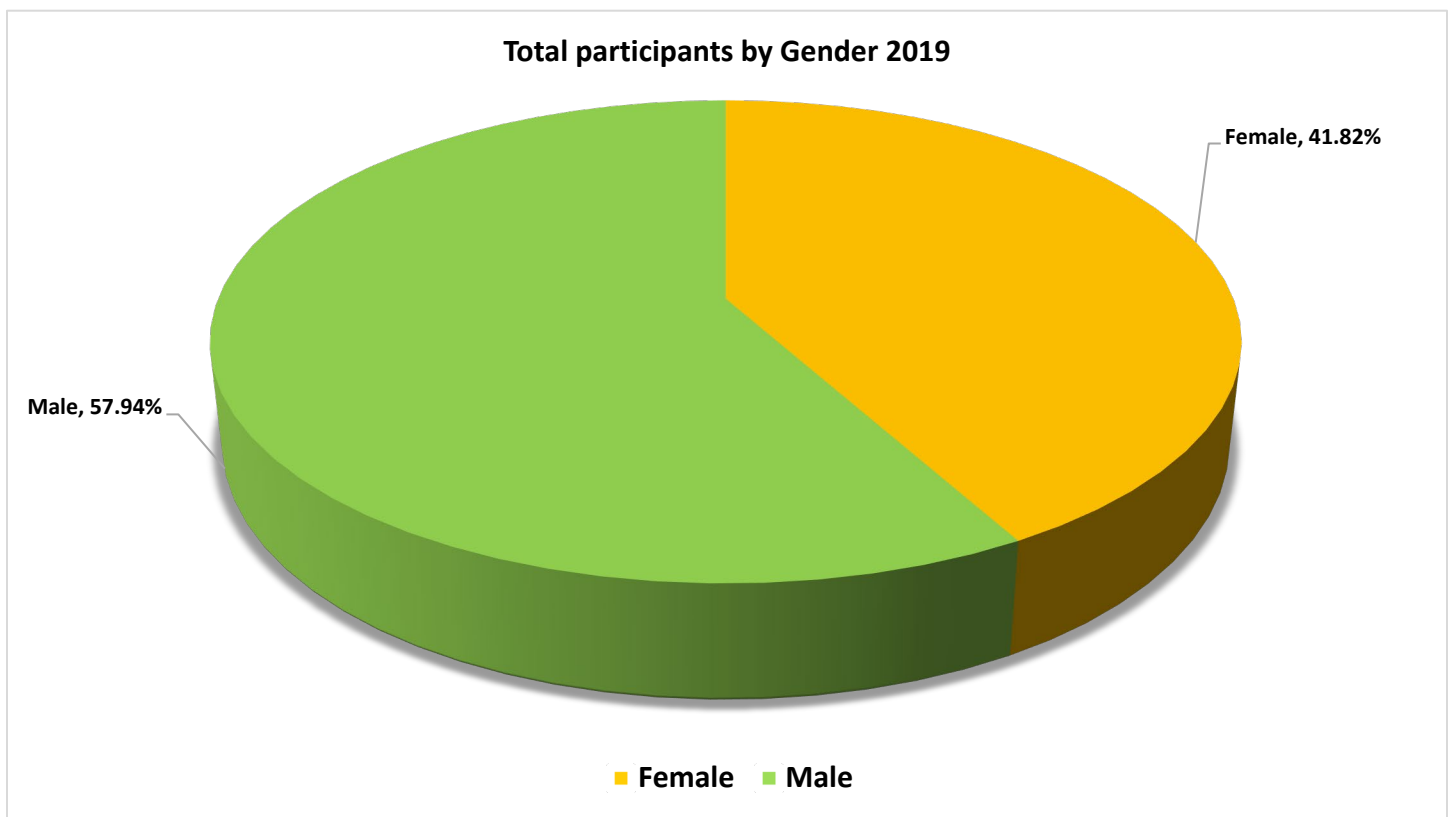
Percent of Patients = (Total Number of Patients/Total Number of Patients Screened)*100%

ELKS DATA REPORT

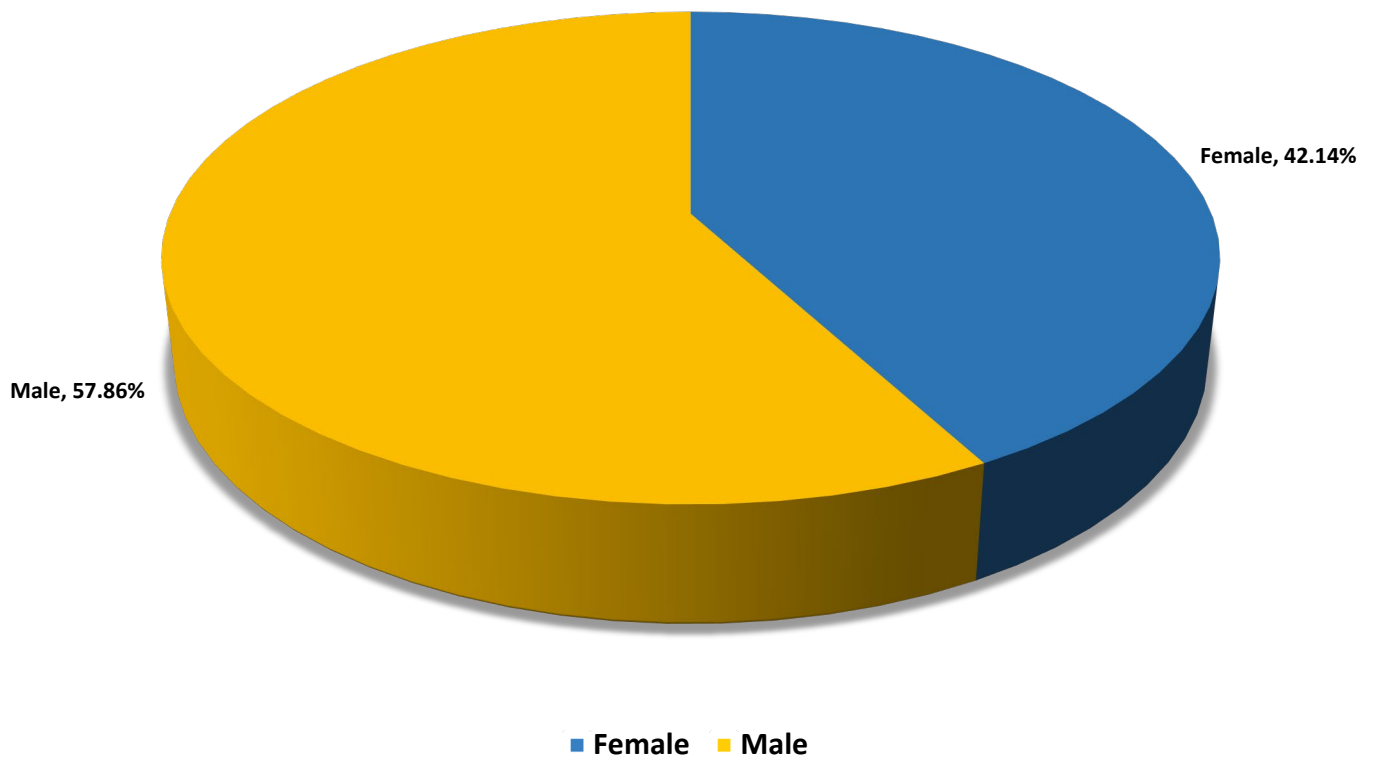
ELKs Data comprises of data collected from the survey results based on Oral Hygiene, Dental Sealants, Treated Decay, Untreated Decay, Treatment Urgency, and History of Rampant Caries that are evaluated based on Gender, Age group, and Race/Ethnicity. The timeline for the data collected for 2019 and 2020 was from January to December for each year excluding April 2020 as there is no data received for this month.

FIGURE 1: TOTAL PARTICIPANTS BY GENDER

(Figure 1 Pie chart of year 2019 have 0.23% of the data as 'Not Specified' i.e. there is no specific information for these fields, this data has been removed for better visualization purposes but have been included during calculations performed)



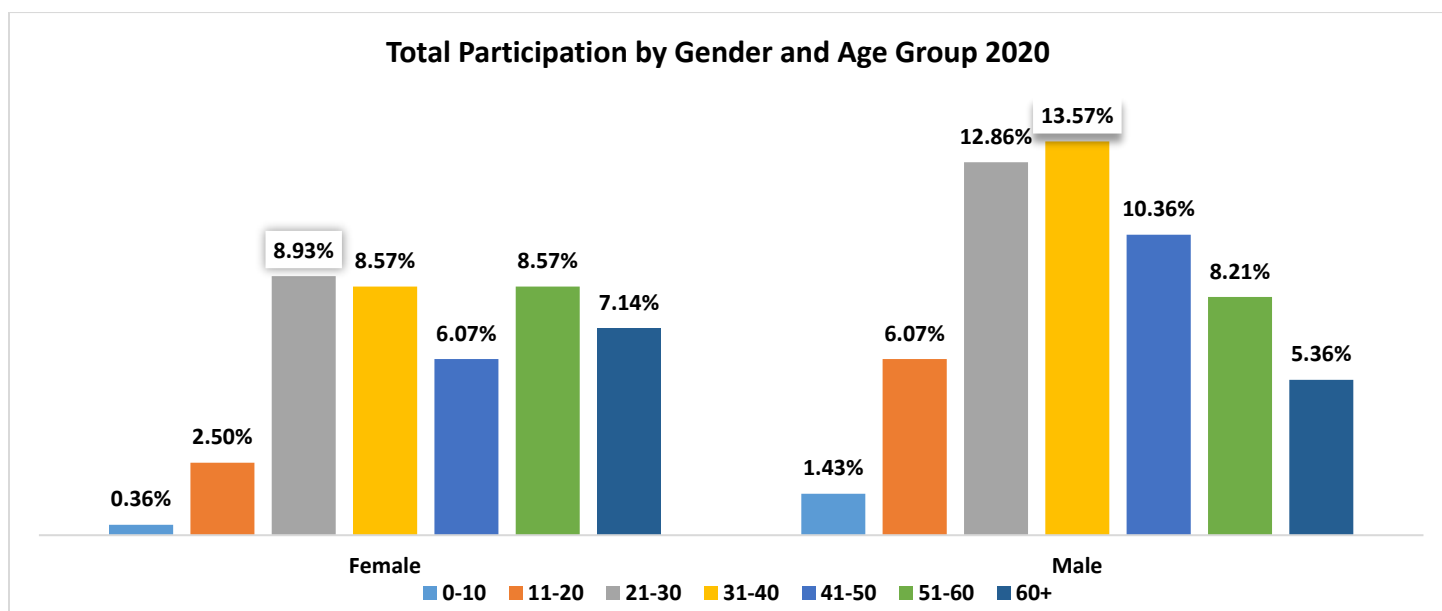
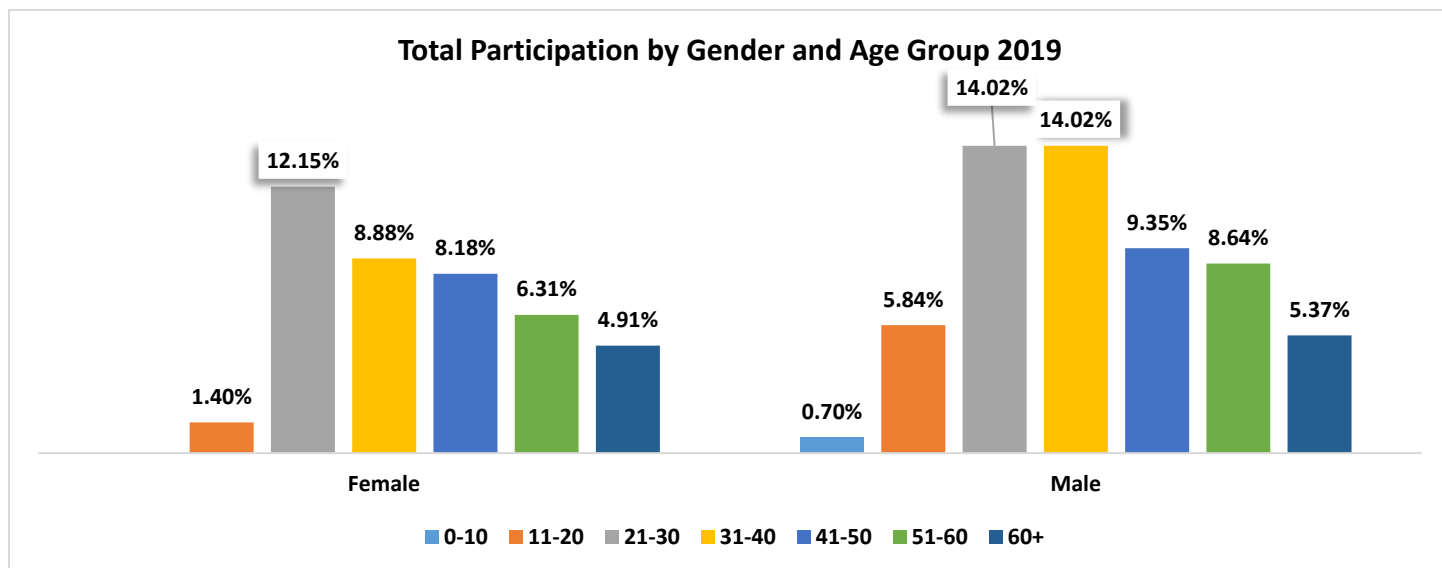
Total participants by Gender 2020



Based on the pie chart above, Males hold the highest percentage of participation i.e. 57.94% and 57.86% for the year 2019 and 2020 respectively.

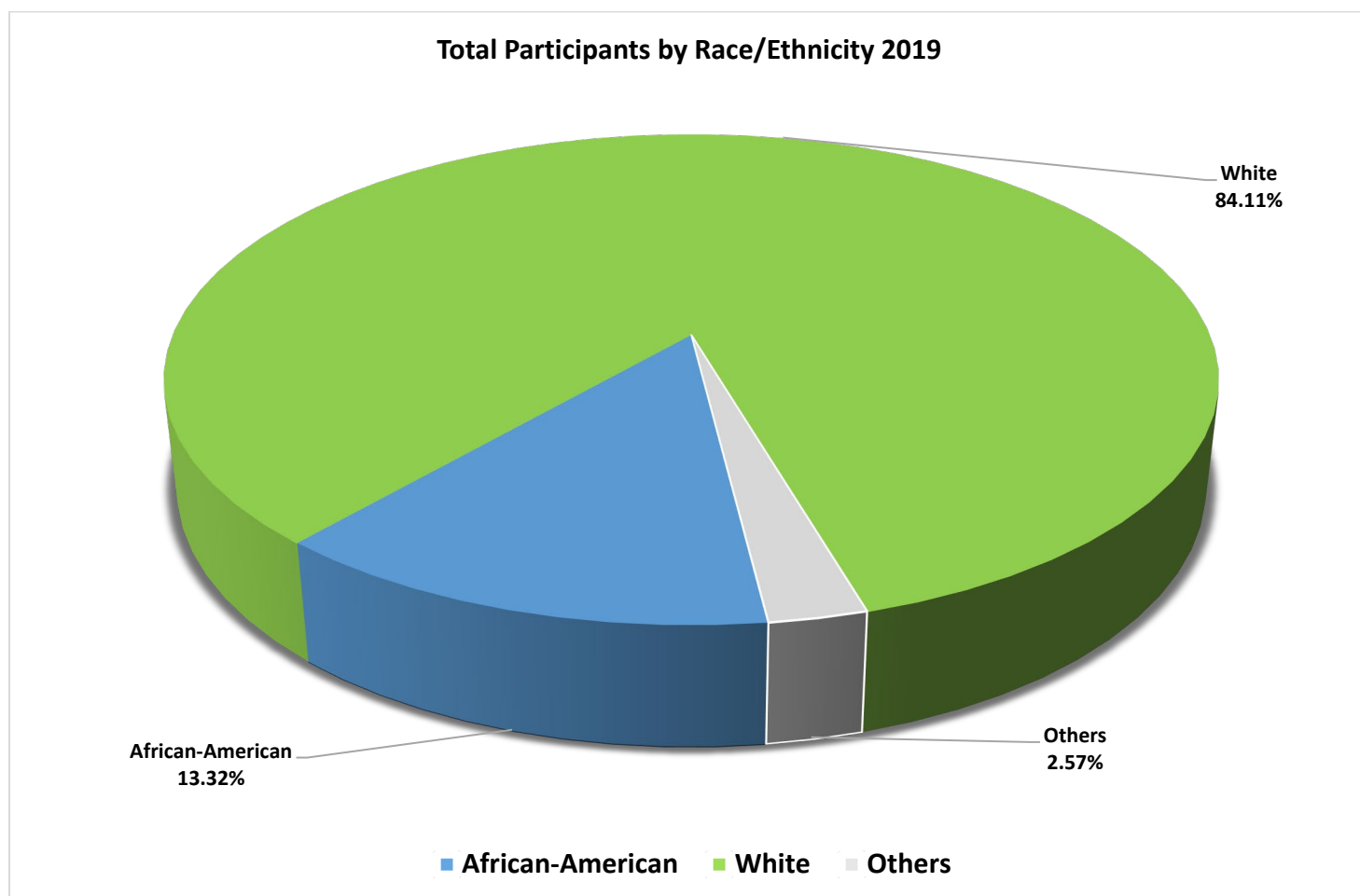
FIGURE 2: TOTAL PARTICIPANTS BY GENDER AND AGE GROUP

(Figure 2 Pie Chart 2019 have 0.23% of the data as 'Not Specified' i.e. there is no specific information for these fields, this data has been removed for better visualization purposes but have been included during calculations performed)

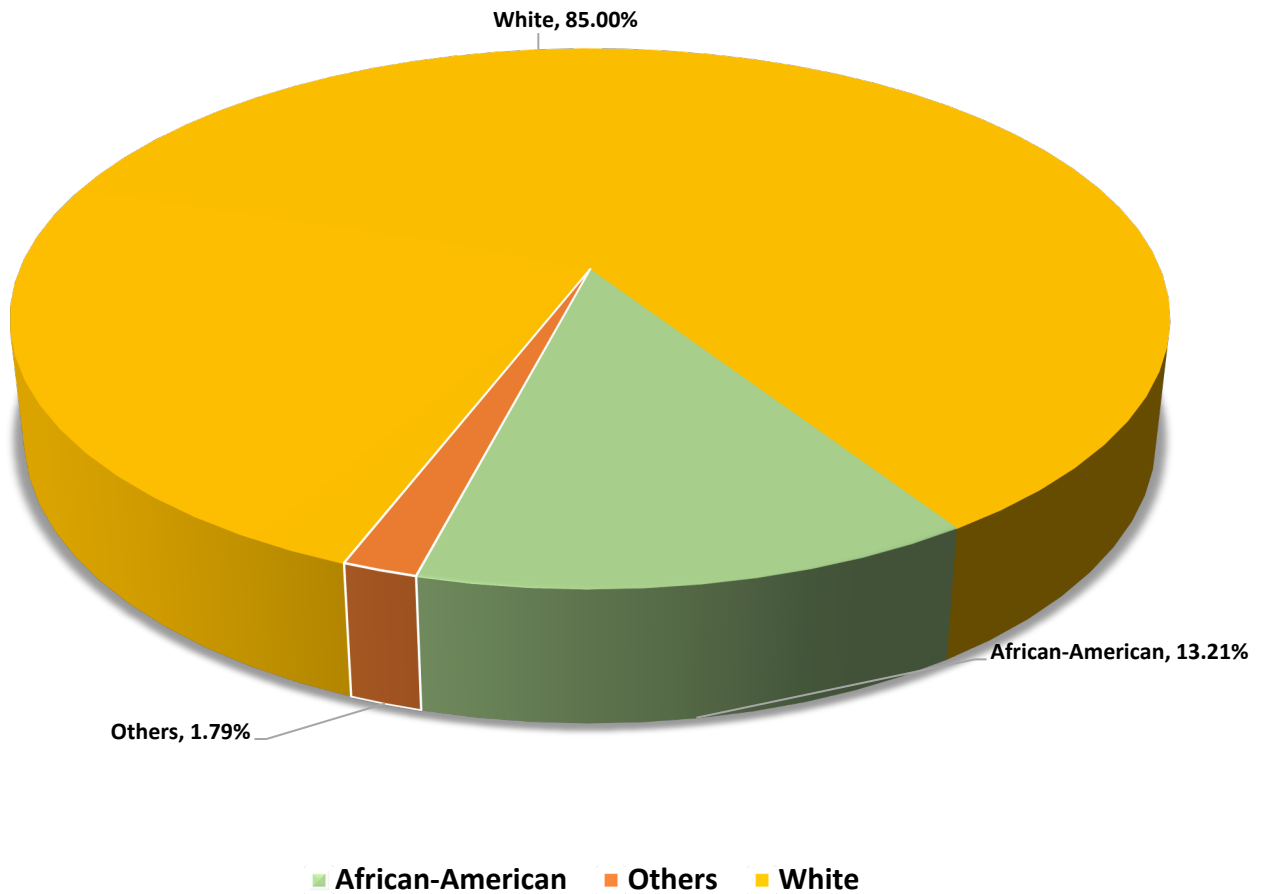


As seen in the bar graphs above, the gray bar for females and males representing age group 21-30 has the highest percentage of participants, followed by age group of 31-40 in Males and age group 41-50 in Females respectively.

FIGURE 3: TOTAL PARTICIPANTS BY RACE/ETHNICITY



Total Participants by Race/Ethnicity 2020



As represented in the Pies above, the major percentage of participation falls under the 'White' race category which accounts for 84.11% in 2019 and 85.00% in 2020. The category 'Others' include – Asian or Pacific Islander, Hispanic, Multi-Racial and accounts for 2.57% in 2019 and 1.79% in 2020 of the participation.

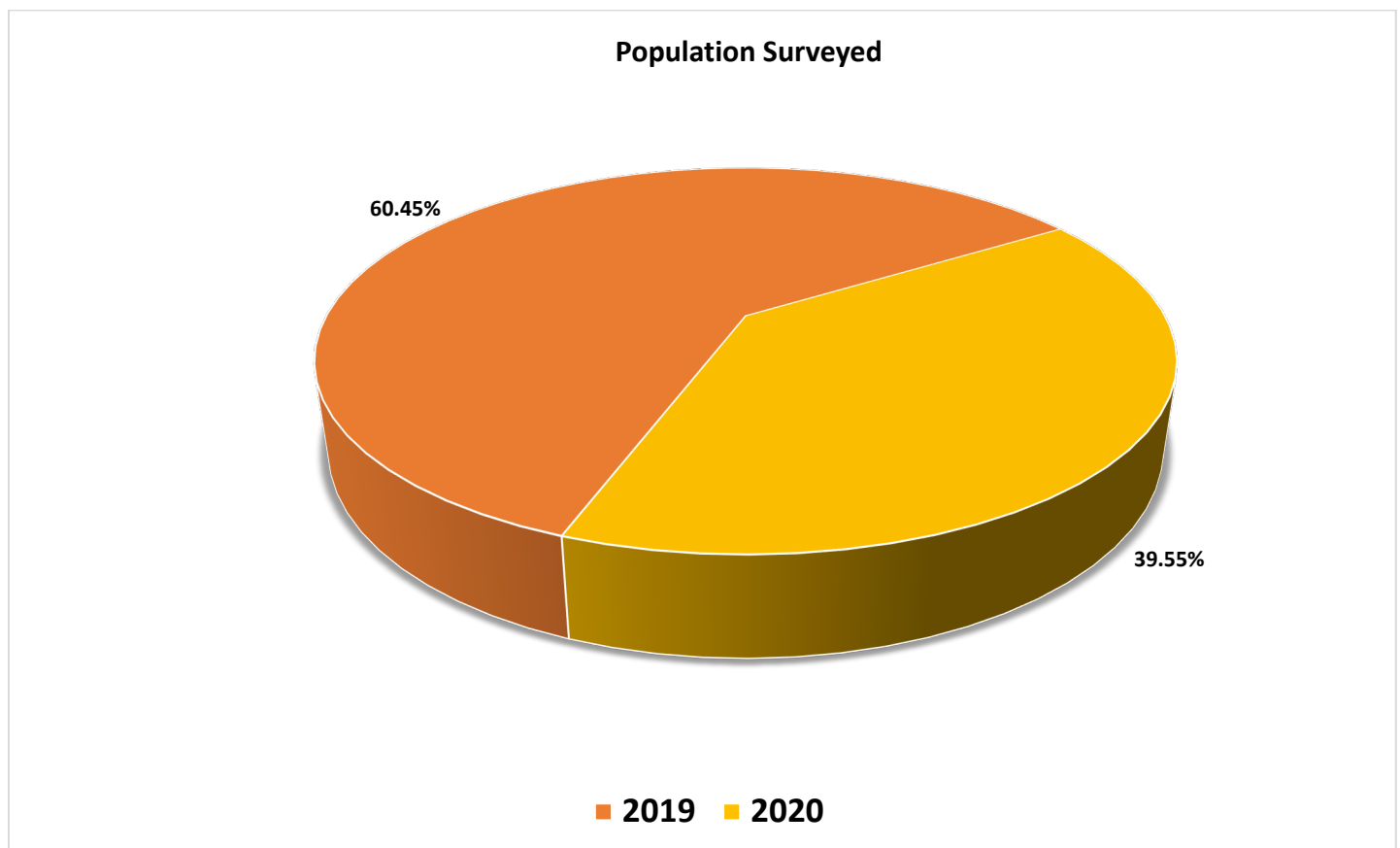
POPULATION SURVEYED

Population surveyed for each category listed below:

1. Survey Category
2. Oral Hygiene
3. Dental Sealants
4. Treated Decay
5. Untreated Decay
6. Treatment Urgency
7. History of Rampant Caries

Out of the total population surveyed of 708 participants, 428 belong to the year 2019 and 280 belong to the year 2020. The pie chart below represents a percentage calculation for the same.

FIGURE 4: TOTAL POPULATION SURVEYED



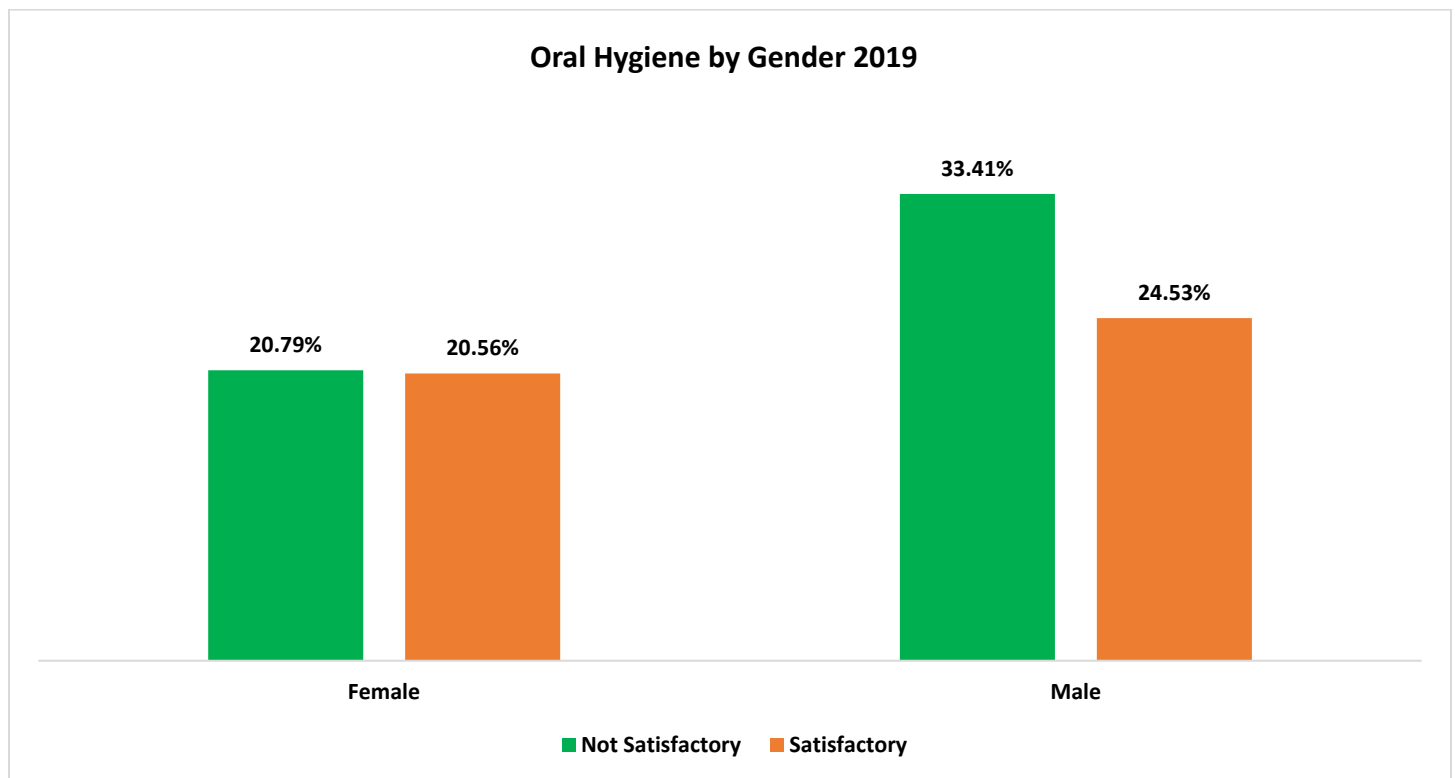
ELKS DATA REPORT- ORAL HYGIENE

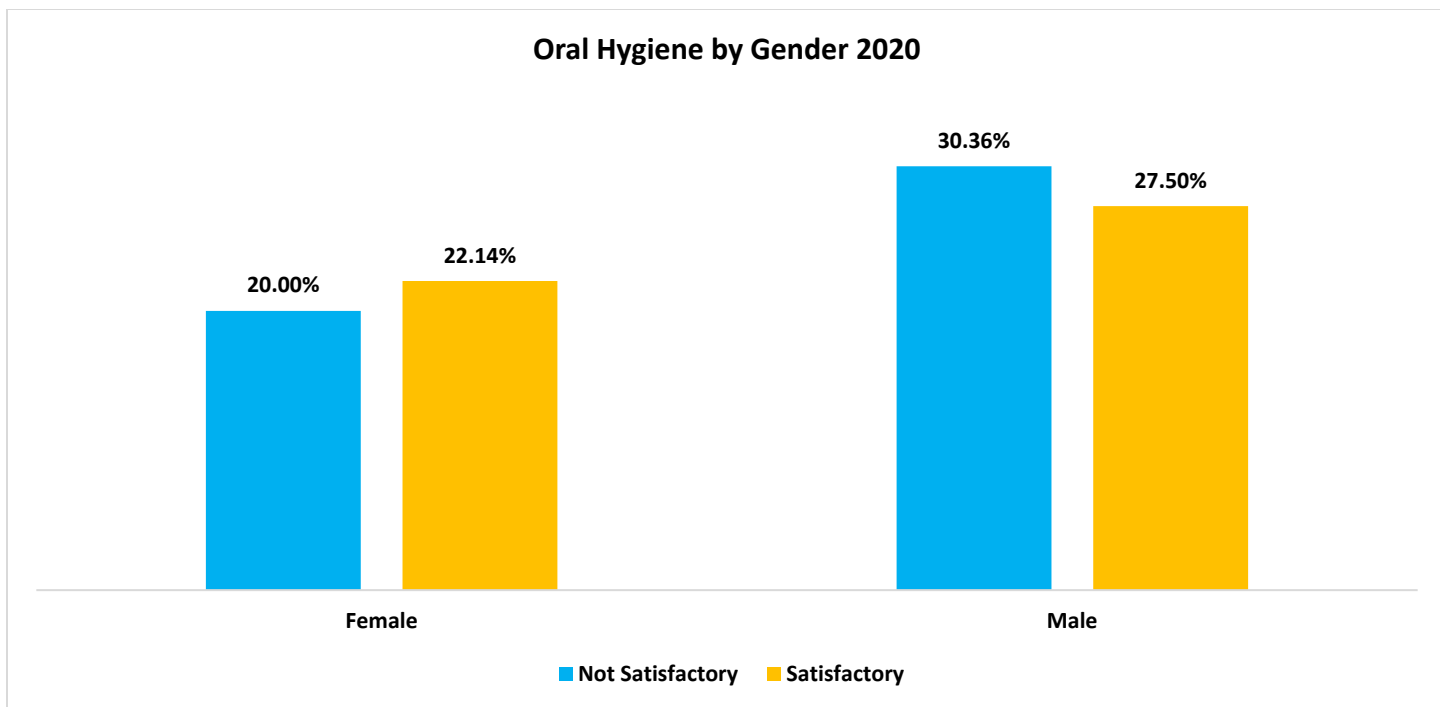
TABLE 1: ORAL HYGIENE BY GENDER

(The data for year 2019 have 0.23% of the data as 'Not Specified' i.e. there is no specific information for these fields, this data has been removed for better visualization purposes but have been included during calculations performed)

Gender	Year	Number_Not Satisfactory	Percentage_Not Satisfactory	Number_Satisfactory	Percentage_Satisfactory
Female	2019	89	20.79%	88	20.56%
Male		143	33.41%	105	24.53%
Female	2020	56	20.00%	62	22.14%
Male		85	30.36%	77	27.50%

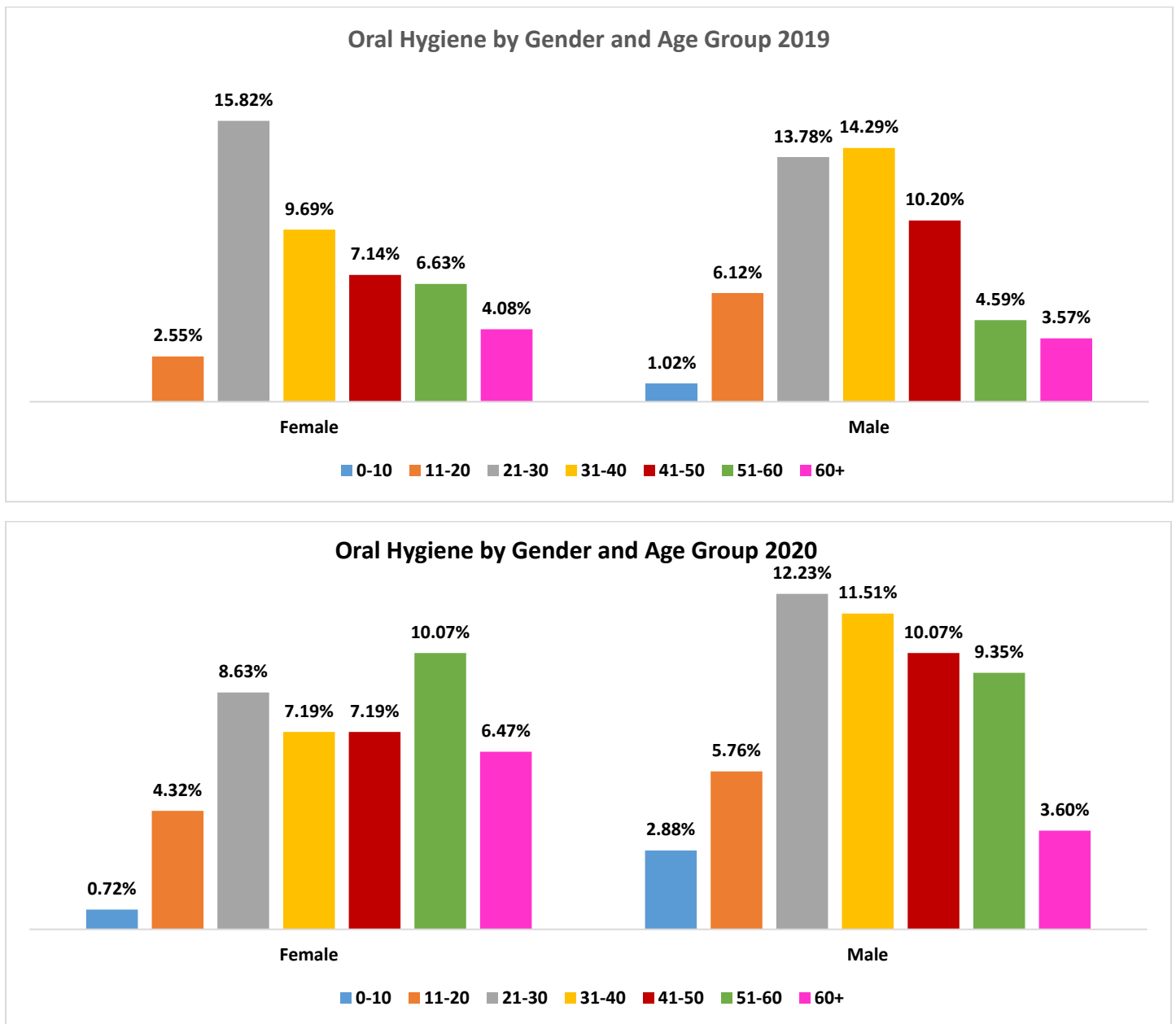
FIGURE 5: ORAL HYGIENE BY GENDER





The chart and the table reflect upon the number of participants who have either ‘Satisfactory’ or ‘Not Satisfactory’ oral hygiene. Among both the genders, males account for the highest percentage of satisfactory oral hygiene for the year 2019 and 2020. The difference between males and females for satisfactory oral hygiene stands at 3.97% for the year 2019 and 5.36% for the year 2020.

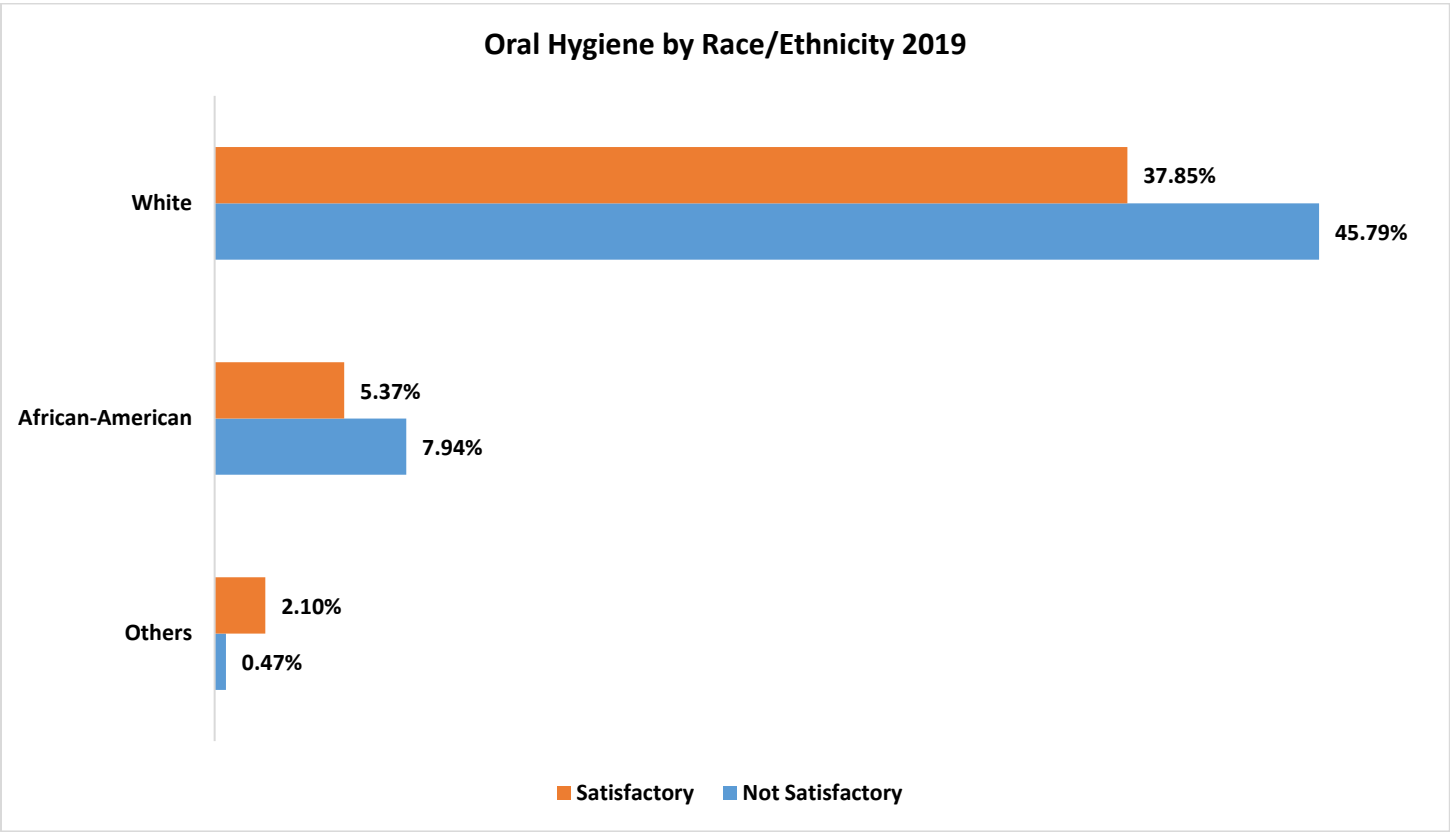
FIGURE 6: ORAL HYGIENE BY GENDER AND AGE GROUP

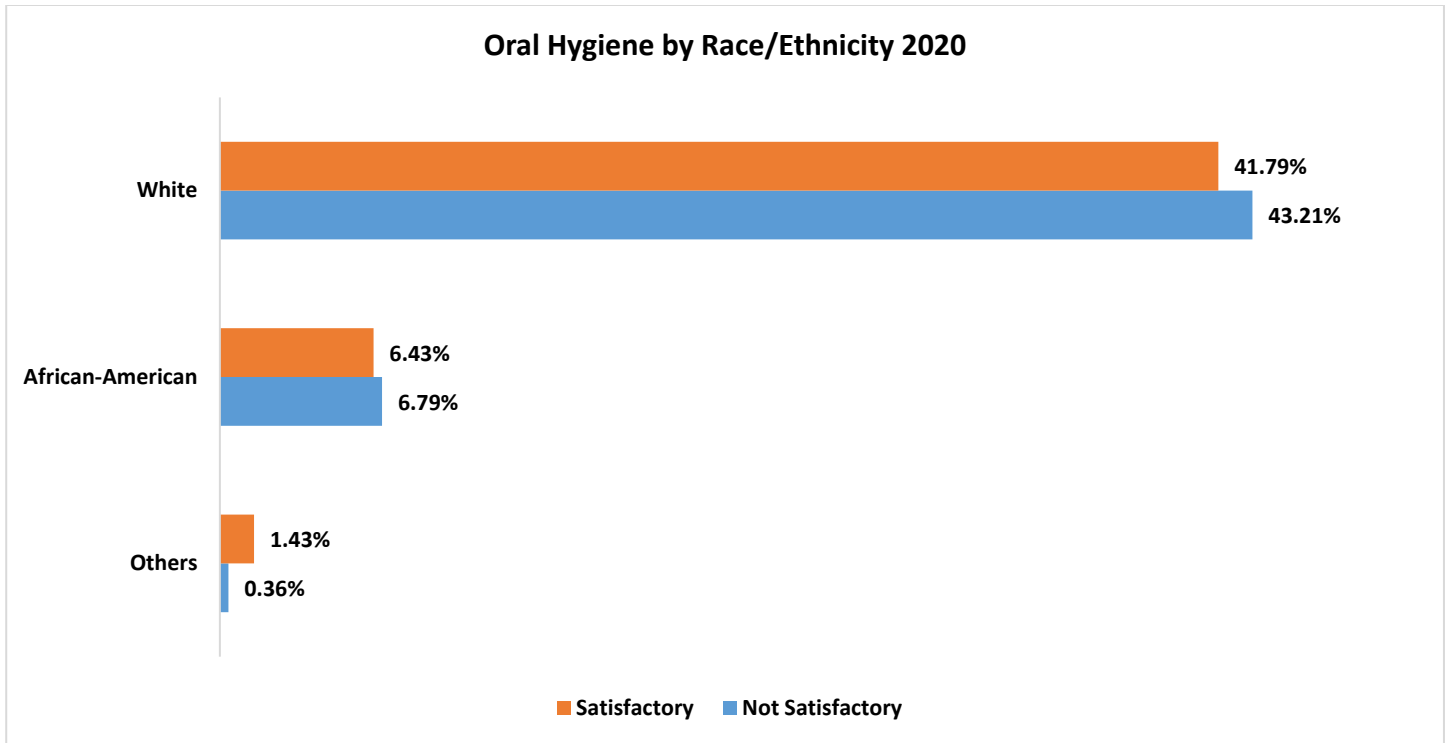


An in-depth analysis of oral hygiene broken down by gender and age group shows that for the year 2019, female participants between 21-30 age group and male of age group 31-40 for the same year has the highest percentage of satisfactory oral hygiene participants. On the other hand, for the year 2020 female participants of the age group 51-60 and males of age group 21-30 have the highest percentage of satisfactory oral hygiene participants.

Note: The year 2019 shows no records of female participants for the 0-10 age group who have 'Satisfactory' oral hygiene.

FIGURE 7: ORAL HYGIENE BY RACE/ETHNICITY





Based on the charts above, the participants that have satisfactory oral hygiene were highest for the 'White' race. It can be seen that from the year 2019 to 2020 the percentage of satisfactory oral hygiene participants increased by 3.94%.

ELKS DATA REPORT- DENTAL SEALANTS

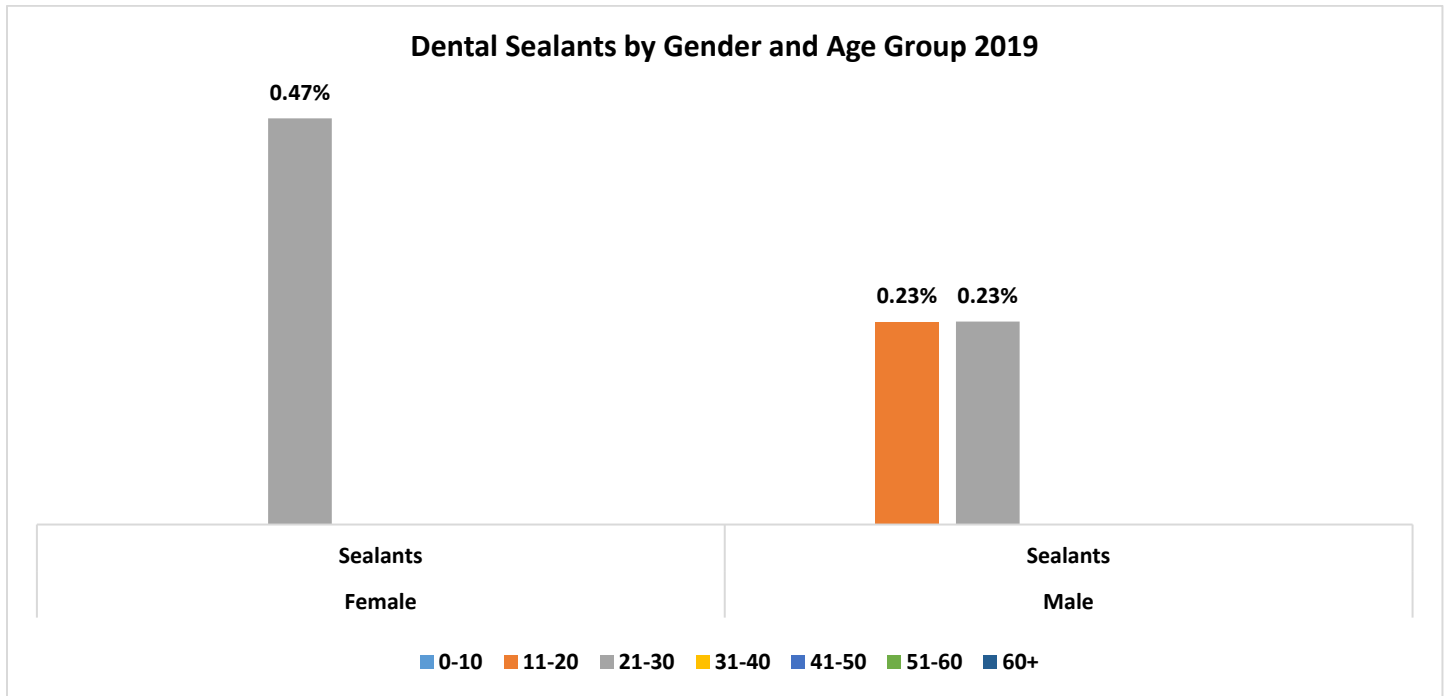
TABLE 2: DENTAL SEALANTS BY GENDER AND AGE GROUP

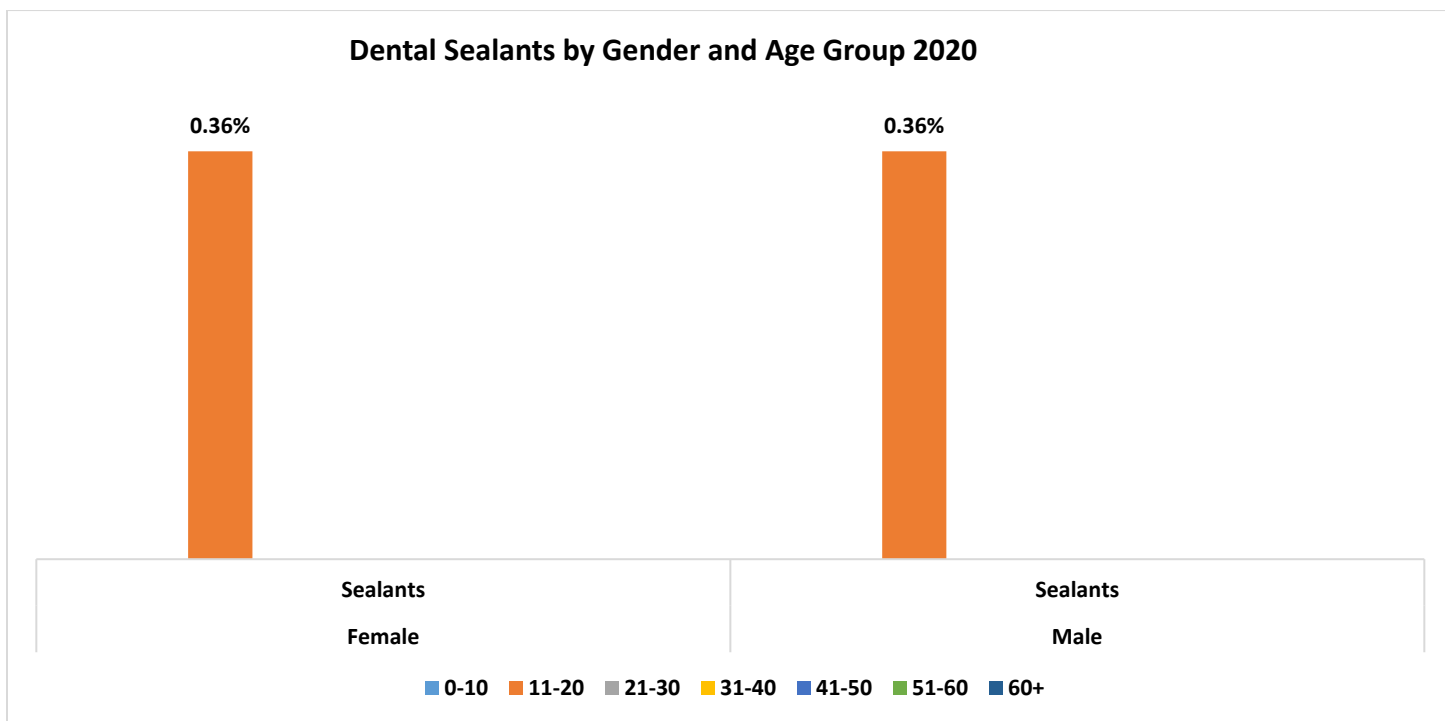
(Table 6 year 2019 have 0.93% of the data as 'Not Specified' i.e. there is no specific information for these field, this data has been removed for better visualization purposes but have been included during calculations performed)

Gender 2019	Presence of Dental Sealants 2019	0-10	11-20	21-30	31-40	41-50	51-60	60+
Female	Sealants	0.00%	0.00%	0.47%	0.00%	0.00%	0.00%	0.00%
	No Sealants	0.00%	1.40%	11.45%	8.64%	8.18%	6.07%	4.91%
Male	Sealants	0.00%	0.23%	0.23%	0.00%	0.00%	0.00%	0.00%
	No Sealants	0.70%	5.61%	13.79%	14.02%	9.35%	8.64%	5.37%

Gender 2020	Presence of Dental Sealants 2020	0-10	11-20	21-30	31-40	41-50	51-60	60+
Female	Sealants	0.00%	0.36%	0.00%	0.00%	0.00%	0.00%	0.00%
	No Sealants	0.36%	2.14%	8.93%	8.57%	6.07%	8.57%	7.14%
Male	Sealants	0.00%	0.36%	0.00%	0.00%	0.00%	0.00%	0.00%
	No Sealants	1.43%	5.71%	12.86%	13.57%	10.36%	8.21%	5.36%

FIGURE 8: DENTAL SEALANTS BY GENDER AND AGE GROUP



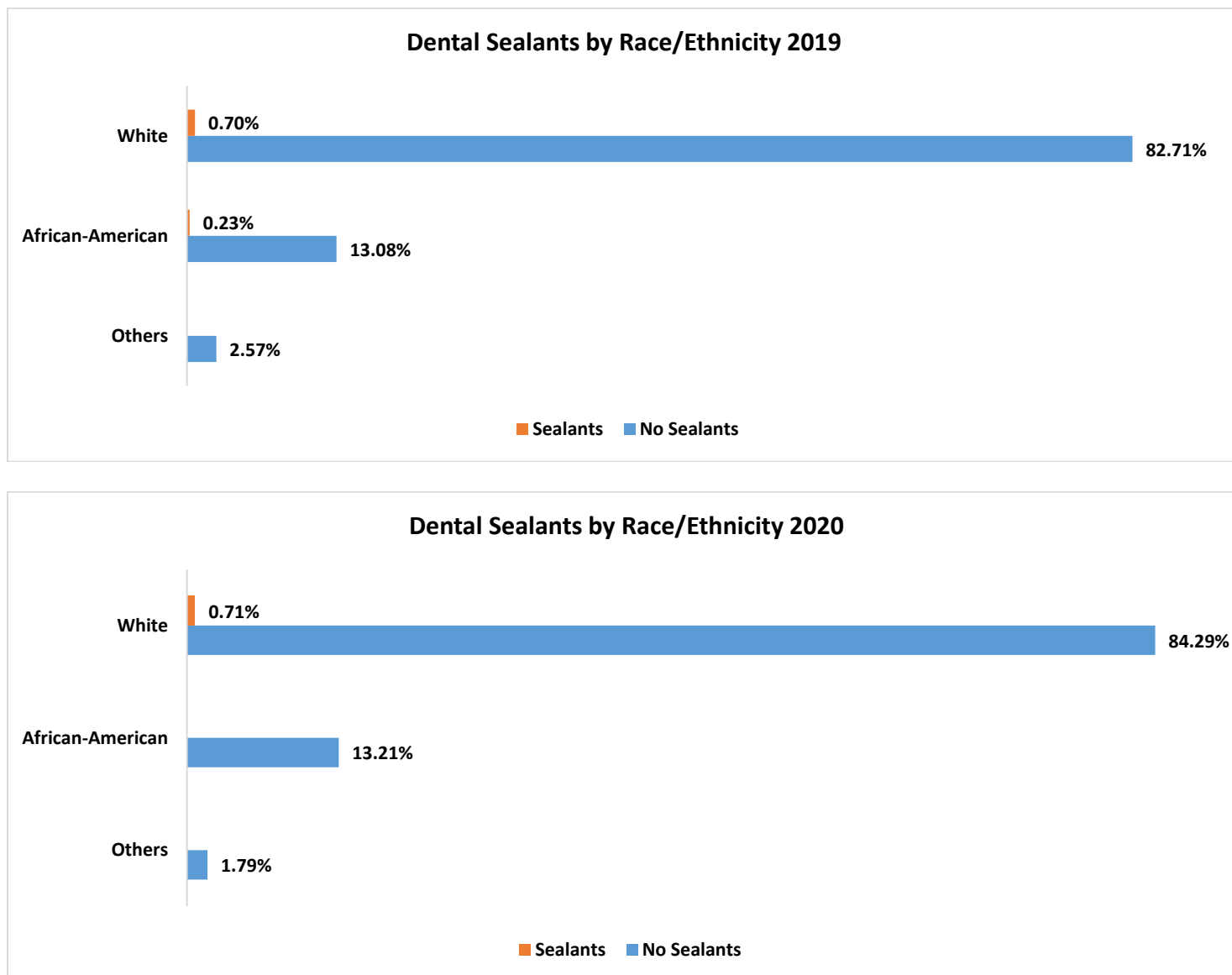


Following are the observations drawn out of the charts for the presence of dental sealants:

1. Out of 428 participants from the year 2019, 0.47% of females and 0.46% of males have dental sealants.
2. Out of 280 participants from the year 2020, there are 0.36% of both the genders (male and female) have sealants.
3. Dental Sealants can be seen in 21-30 years of females and 11-30 years of males in the year 2019. Additionally, for the year 2020, dental sealants can be seen for the females and males of the age group 11-20.

Note: The charts above show the presence of sealants in the years 2019 and 2020. The data that contains no sealants has been removed from the chart for better visualization.

FIGURE 9: DENTAL SEALANTS BY RACE/ETHNICITY



Key take-away from the above graphs:

1. 2019- The percentage of the participants who had dental sealants for 'White' is more than the ones for the 'African-American' participants.
2. 2020- The participants for the race 'African American' did not have dental sealants as revealed from the data for the year 2020.
3. Participants who have no dental sealants have increased from the year 2019 to 2020 although, the number of participants for the year 2019 was more than the ones for 2020.

ELKS DATA REPORT- TREATED DECAY

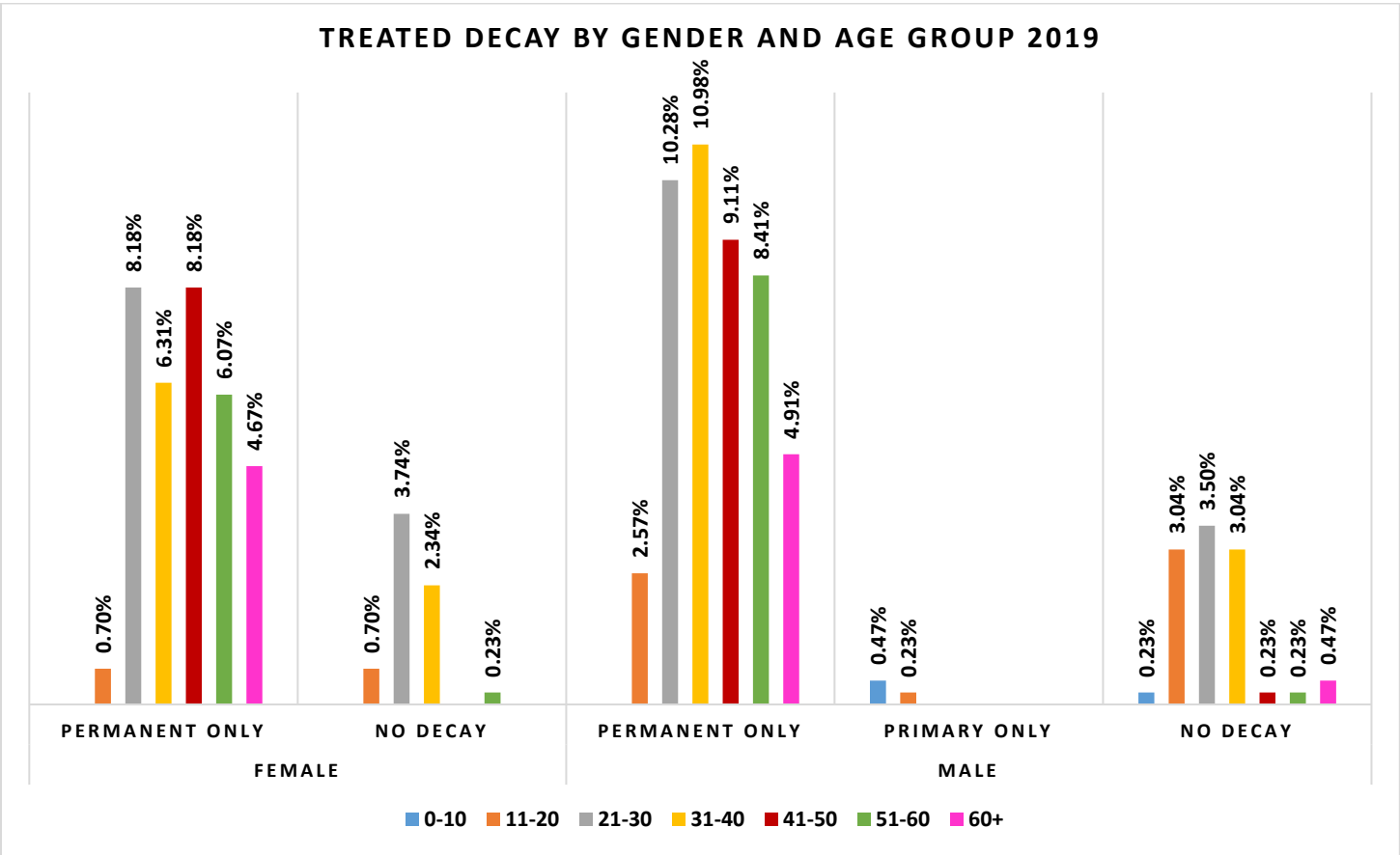
TABLE 3: TREATED DECAY BY GENDER

(Table 7 year 2019 data has 1.16% as 'Not Specified' i.e. there is no specific information for these fields, this data has been removed for better visualization purposes but have been included during calculations performed ahead)

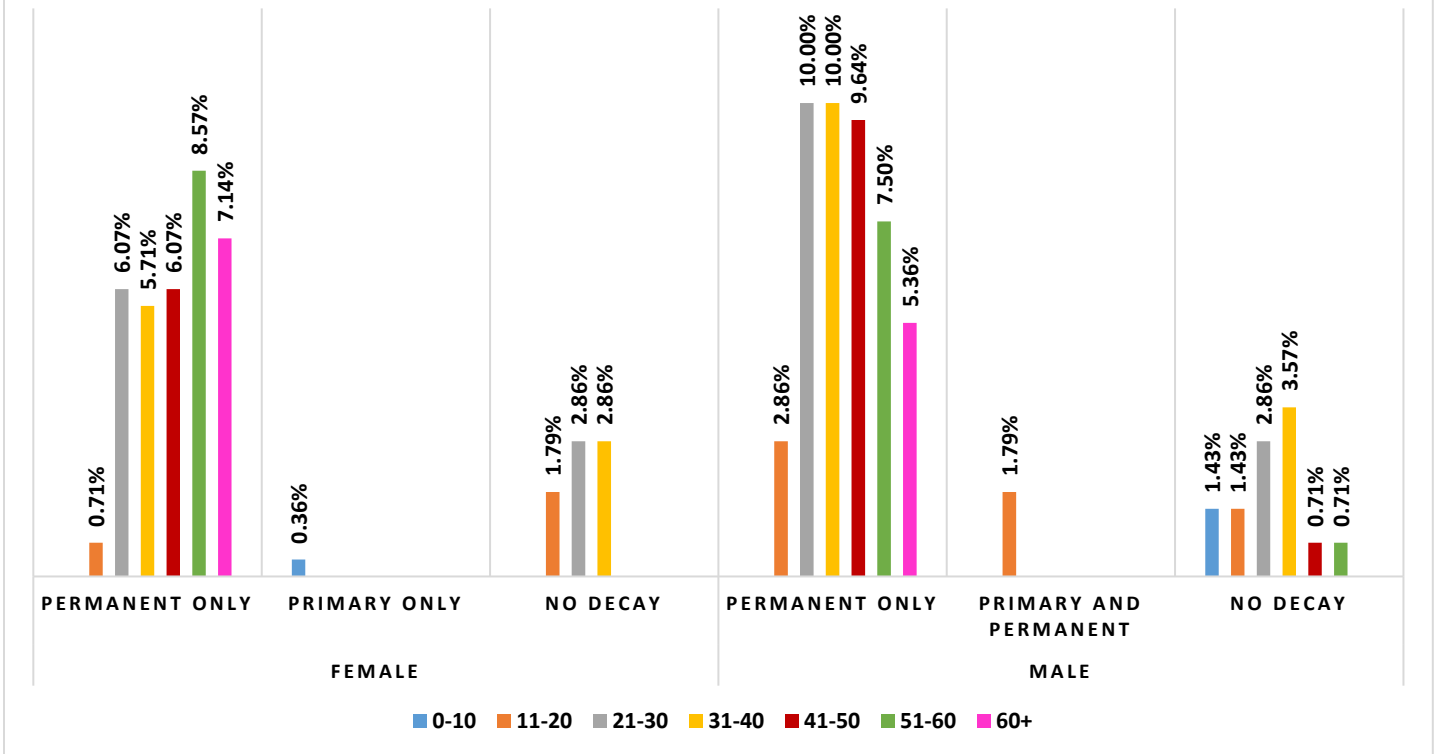
Gender 2019	Primary Only	Permanent Only	No Decay	Not Specified	Grand Total
Female	0.00%	34.11%	7.01%	0.70%	41.82%
Male	0.70%	46.26%	10.75%	0.23%	57.94%
Gender Not Specified	0.00%	0.23%	0.00%	0.00%	0.23%
Grand Total	0.70%	80.61%	17.76%	0.93%	100.00%

Gender 2020	Primary Only	Permanent Only	Primary and Permanent	No Decay	Grand Total
Female	0.36%	34.29%	0.00%	7.50%	42.14%
Male	0.00%	45.36%	1.79%	10.71%	57.86%
Grand Total	0.36%	79.64%	1.79%	18.21%	100.00%

FIGURE 10: TREATED DECAY BY GENDER AND AGE GROUP



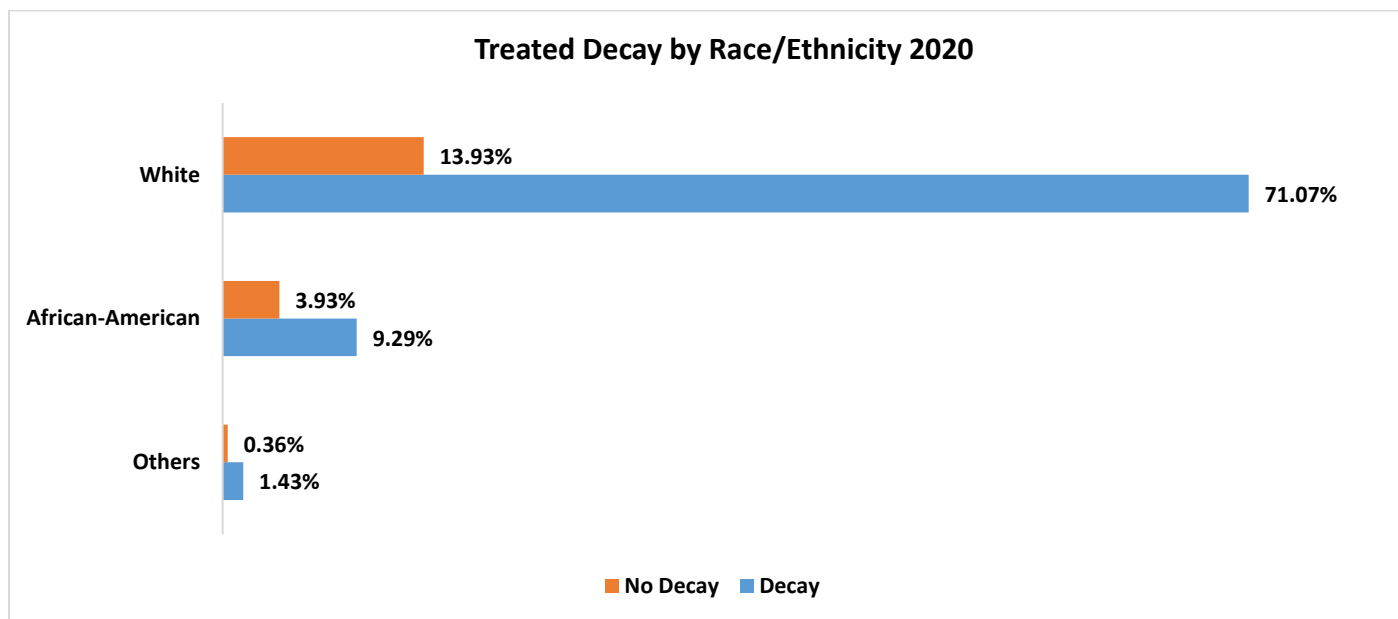
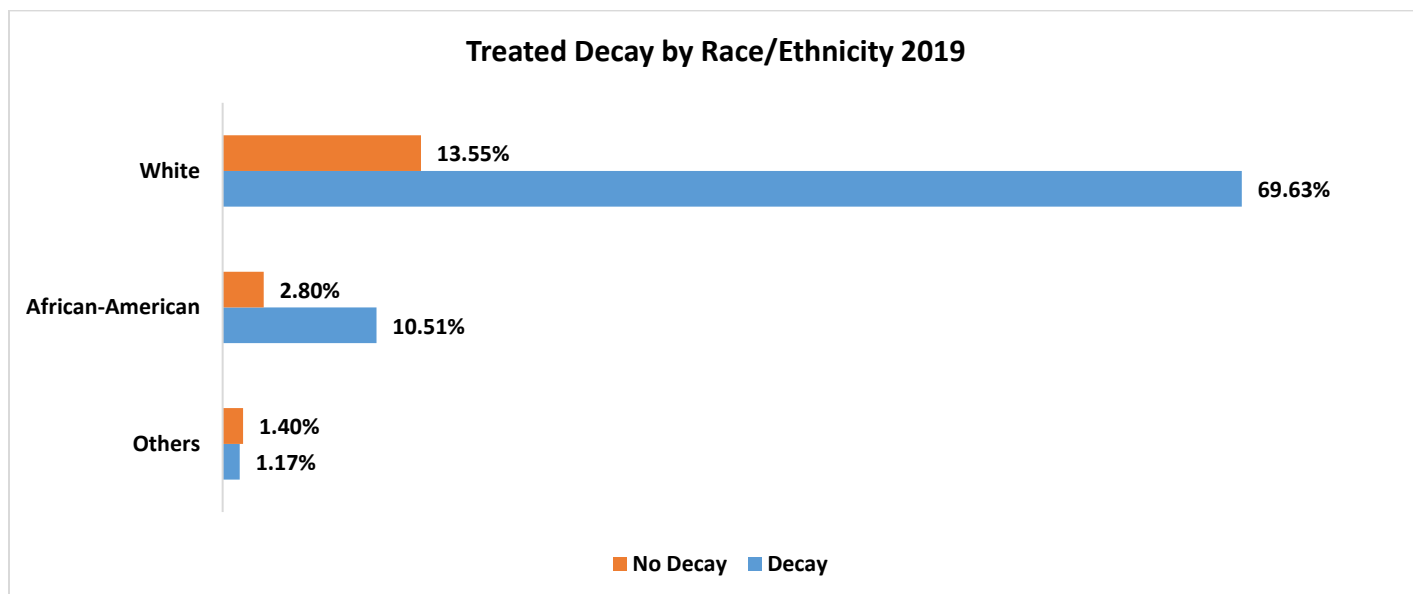
TREATED DECAY BY GENDER AND AGE GROUP 2020



Key take-away from the charts above:

1. Females of age group 21-30 and 51-60 have the highest percentage of treated decay for the 'Permanent Only' category from the year 2019. Whereas, for the year 2020 females falling under the age group 51-60 have the highest percentage of treated decay for the 'Permanent Only' category.
2. There could be seen a 0.36% of the treated decay under the category of 'Primary Only' in the female participants of the year 2020. On the other hand, the 'Primary Only' category seems to be non-existent for the year 2019 in females.
3. Males of the age group 31-40 of the year 2019 and age group 21-30 and 31-40 have the highest percentage of treated decay for the 'Permanent Only' category.
4. There could be seen a 0.47% of the treated decay for age group 0-10 and a 0.23% of treated decay for the age group of 11-20 under the category of 'Primary Only' in the male participants of the year 2019. On the other hand, the 'Primary Only' category seems to be non-existent for the year 2020 in males.
5. Percentage of males under the 'Primary and Permanent' category for the year 2020 accounts for 1.79% of the total participants. The 'Primary and Permanent' category seems to be non-existent for the year 2019 in the male gender.

FIGURE 11: TREATED DECAY BY RACE/ETHNICITY



Note: Treated Decay has been divided into two categories i.e. No Decay and Decay. 'No Decay' comprises of participants' results that state there is no treated decay found whereas, the category 'Decay' represents the type of treated decay found in the participants of 'Primary and Permanent' or 'Permanent only' category. As seen in the horizontal bar charts above, the percentage of treated decay in 'White' patients accounts highest amongst the other categories of race/ethnicity for both the years.

ELKS DATA REPORT- UNTREATED DECAY

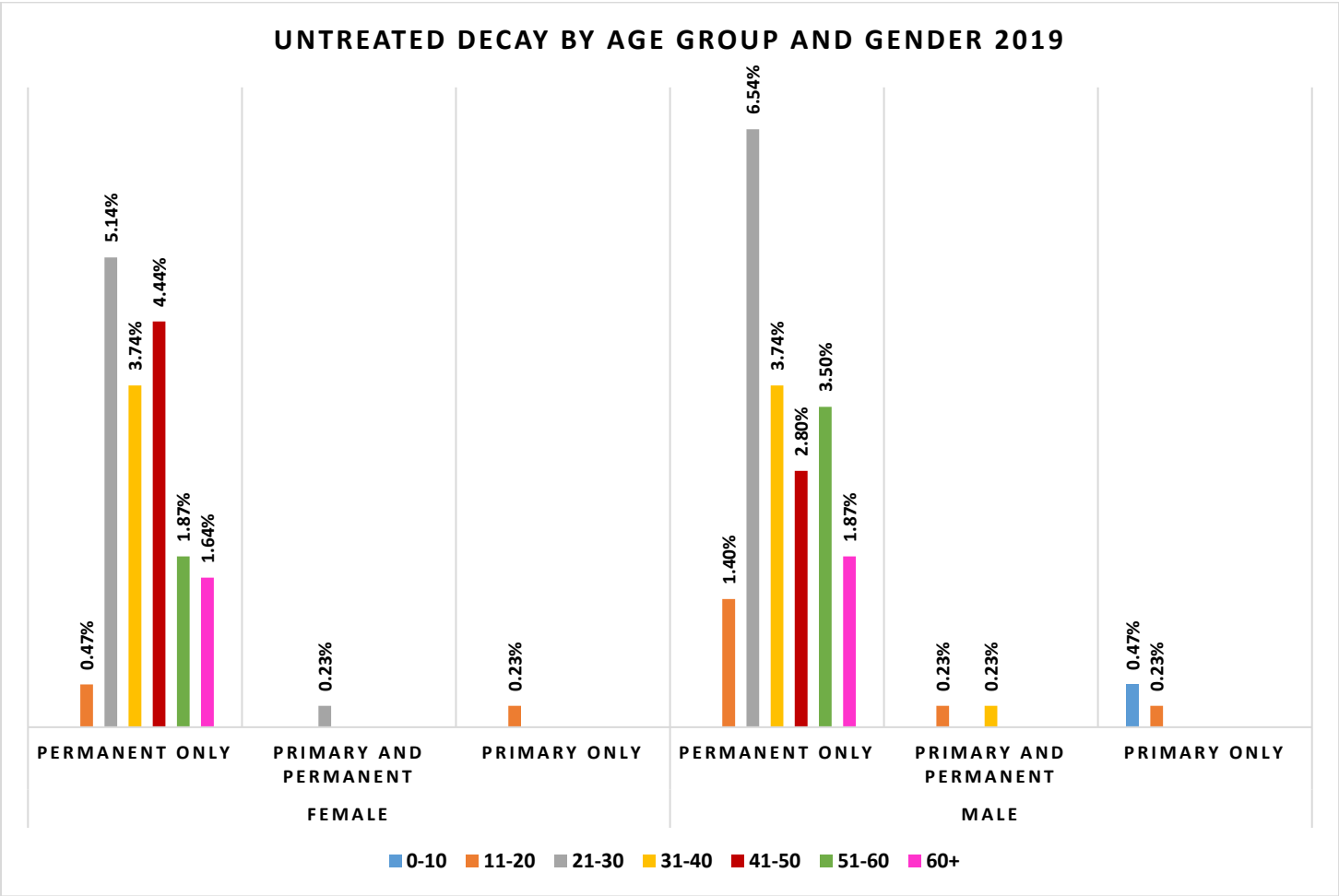
TABLE 4: UNTREATED DECAY BY GENDER

(Table 9 year 2019 has 1.86% of the data as 'Not Specified' i.e. there is no specific information of gender for age group 51-60, this data has been removed for better visualization purposes but have been included during calculations performed)

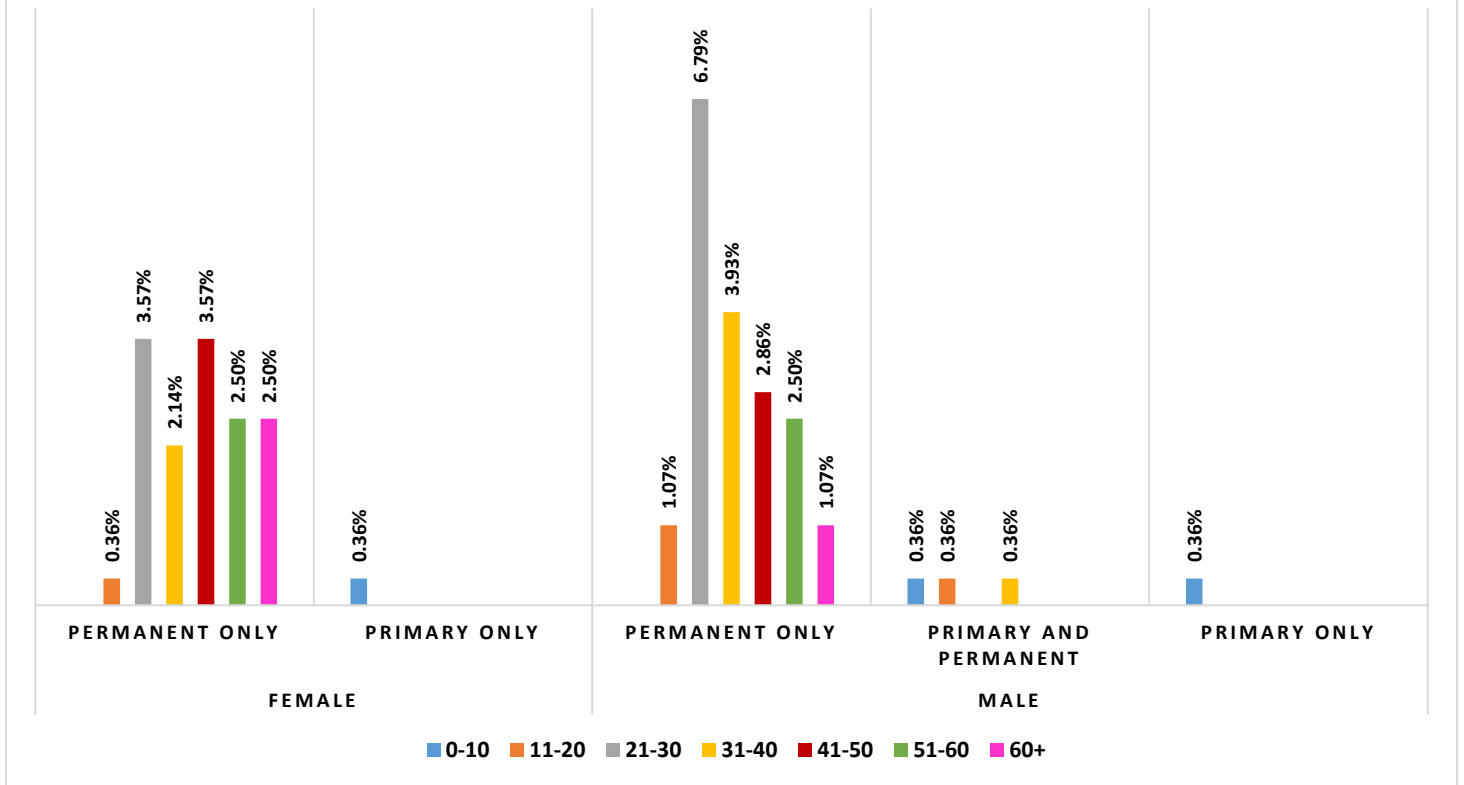
Gender 2019	Permanent Only	Primary and Permanent	Primary Only	No Untreated Decay	Not Specified	Grand Total
Female	17.29%	0.23%	0.23%	23.36%	0.70%	41.82%
Male	19.86%	0.47%	0.70%	35.98%	0.93%	57.94%
Gender Not Specified	0.00%	0.00%	0.00%	0.23%	0.00%	0.23%
Grand Total	37.15%	0.70%	0.93%	59.58%	1.64%	100.00%

Gender 2020	Permanent Only	Primary and Permanent	Primary Only	No Untreated Decay	Grand Total
Female	14.64%	0.00%	0.36%	27.14%	42.14%
Male	18.21%	1.07%	0.36%	38.21%	57.86%
Grand Total	32.86%	1.07%	0.71%	65.36%	100.00%

FIGURE 12: UNTREATED DECAY BY AGE GROUP AND GENDER



UNTREATED DECAY BY AGE GROUP AND GENDER 2020



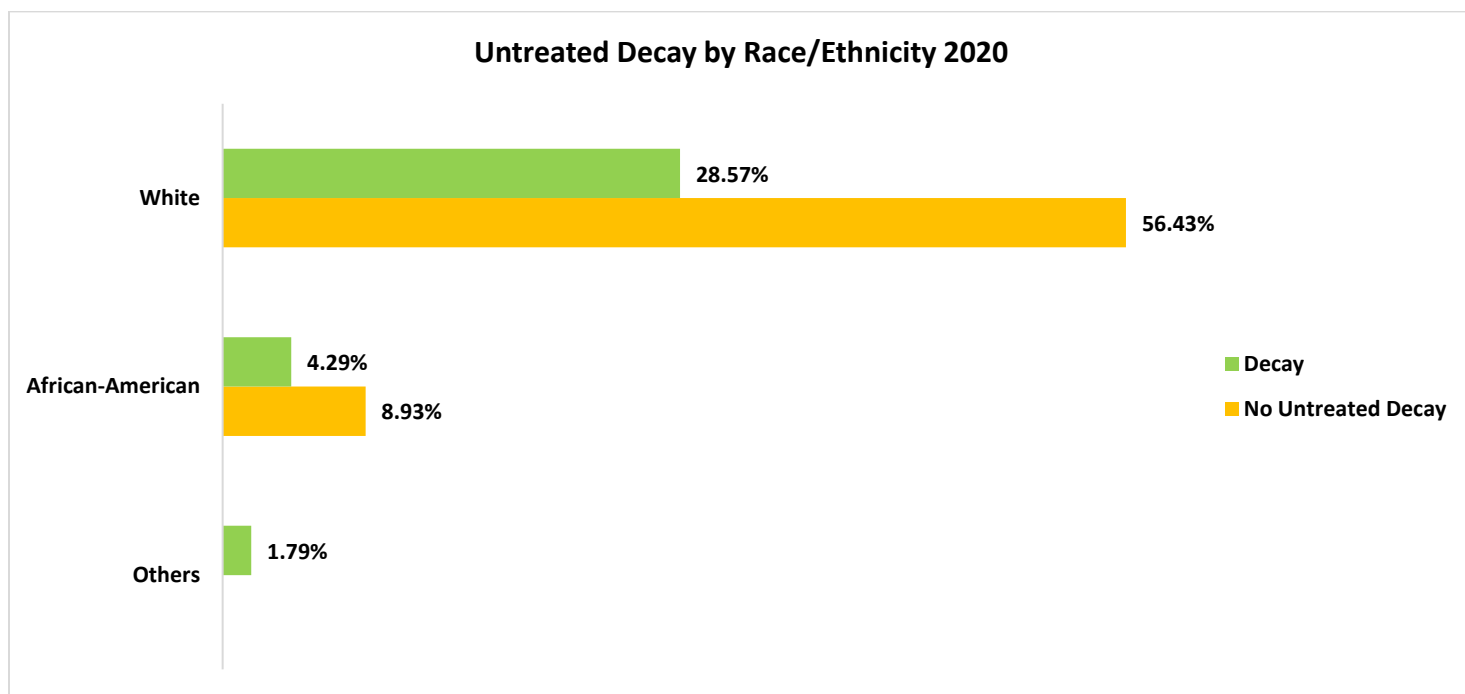
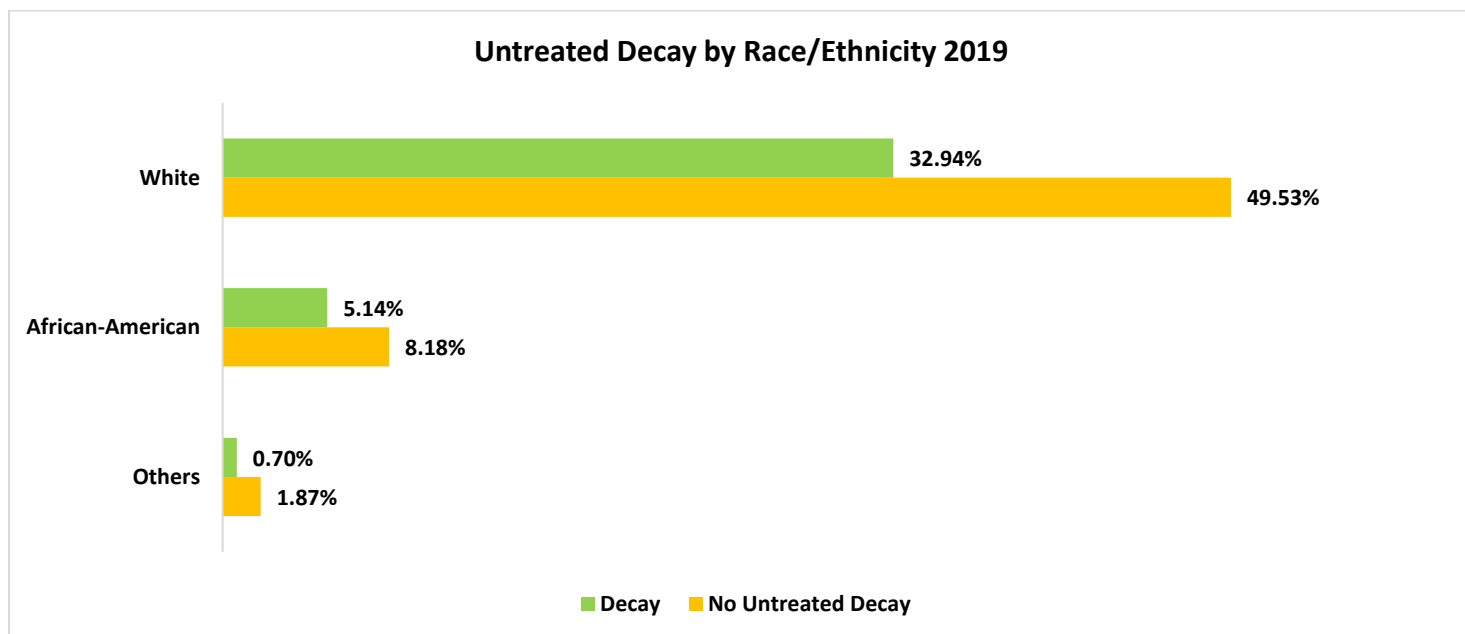
The untreated decay data has been categorized under four types which are as follows:

1. Permanent (Teeth) Only
2. Primary and Permanent (Teeth)
3. Primary (Teeth) Only
4. No Untreated Decay

These categories have been evaluated based on Gender and Age group in Figure 12. The following observations can be drawn out of Figure 12:

1. As seen in the chart above for the years 2019 and 2020, participants of the age group 21-30 have the highest percentage of 'Permanent Only' untreated decay type.
2. For the year 2019, females of age group 21-30 had 'Primary and Permanent' untreated decay. Also, females of the age group of 11-20 had 'Primary Only' untreated decay.
3. For the year 2020, both the genders of age group 0-10 have 'Primary Only' untreated decay.
4. Males of the year 2020, under the age group of 0-10, 11-20, and 31-40 have 'Primary and Permanent' untreated decay.

FIGURE 13: UNTREATED DECAY BY RACE/ETHNICITY



The categories of 'Permanent Only', 'Primary Only', 'Primary and Permanent' have been clubbed as 'Decay' in the graph above. As seen, participants who belong to the 'White' race have the highest percentage of untreated decay in both years.

ELKS DATA REPORT- TREATMENT URGENCY

TABLE 5: TREATMENT URGENCY BY GENDER

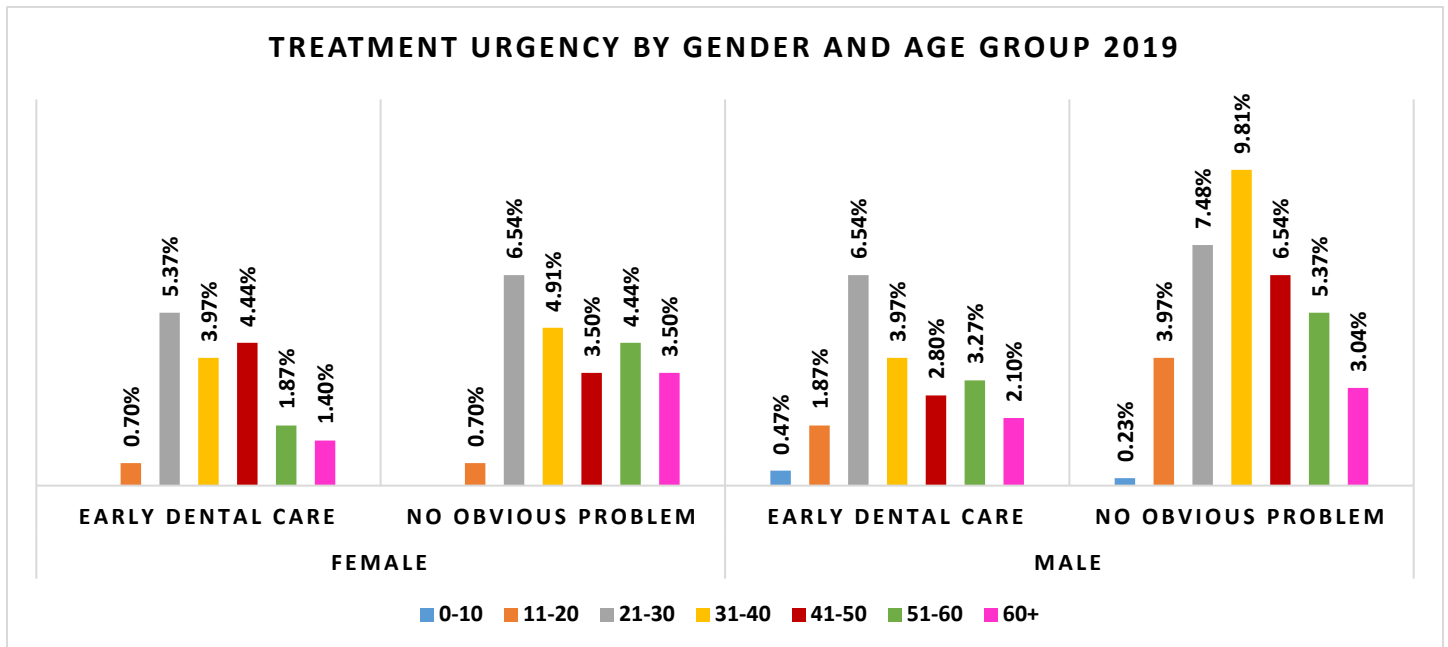
(Table 10 year 2019 have 0.94% of the data as 'Not Specified' i.e. there is no specific information for these fields, this data has been removed for better visualization purposes but have been included during calculations performed)

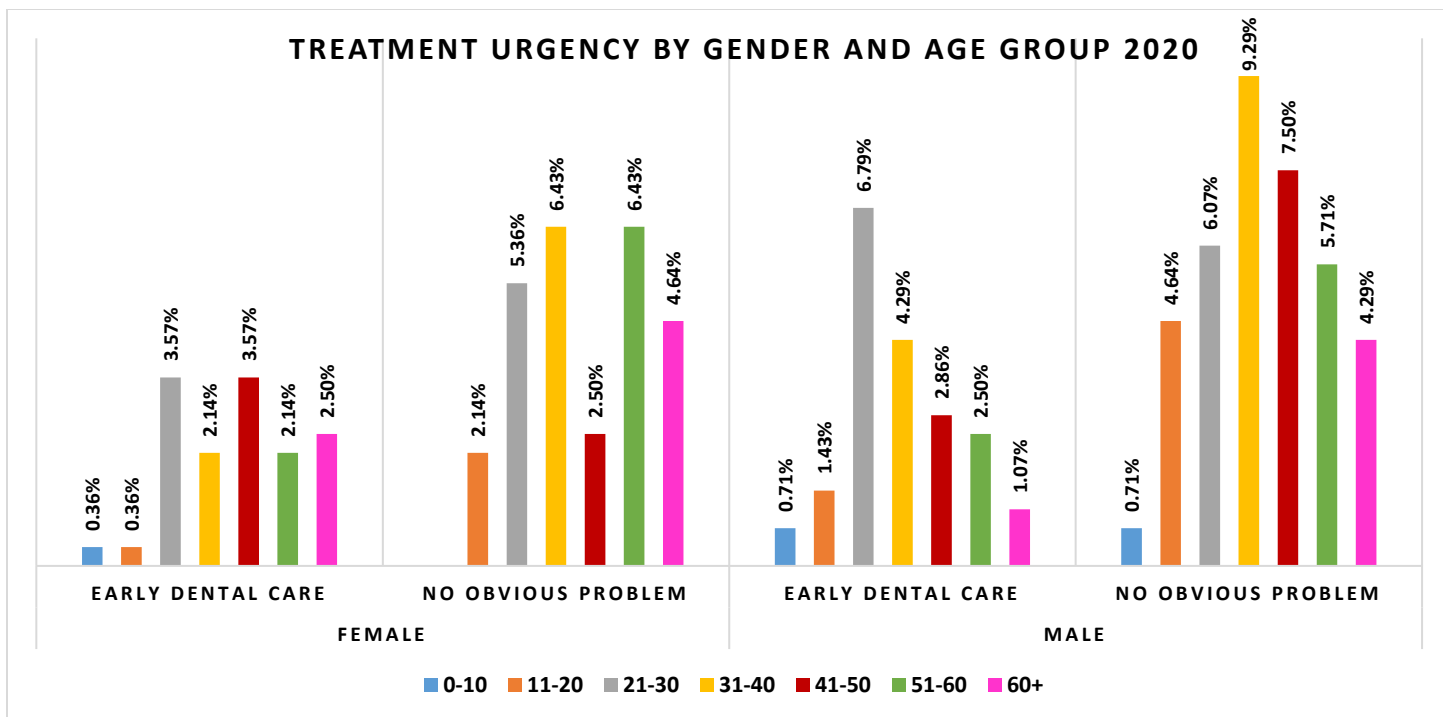
Gender 2019	Treatment Urgency	Number of Treatment Urgency	Percentage Treatment Urgency
Female	Early Dental Care	76	17.76%
	No Obvious Problem	101	23.60%
Male	Early Dental Care	90	21.03%
	No Obvious Problem	156	36.45%

Gender 2020	Treatment Urgency	Number of Treatment Urgency	Percentage of Treatment Urgency
Female	Early Dental Care	41	14.64%
	No Obvious Problem	77	27.50%
Male	Early Dental Care	55	19.64%
	No Obvious Problem	107	38.21%
Grand Total		280	100.00%

The table above shows the total number of participants in each of the categories and the percentage representation of the total number of participants surveyed (CY 2019 = 428 and CY 2020 = 280).

FIGURE 14: TREATMENT URGENCY BY GENDER AND AGE GROUP

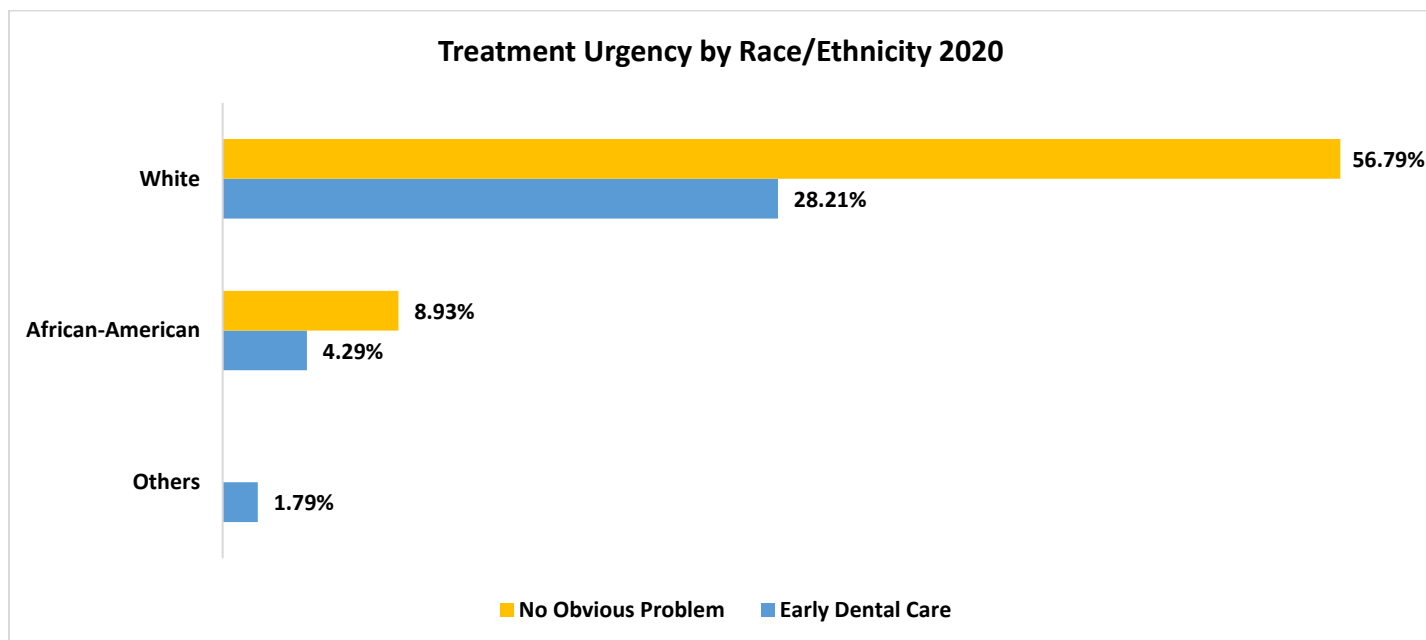
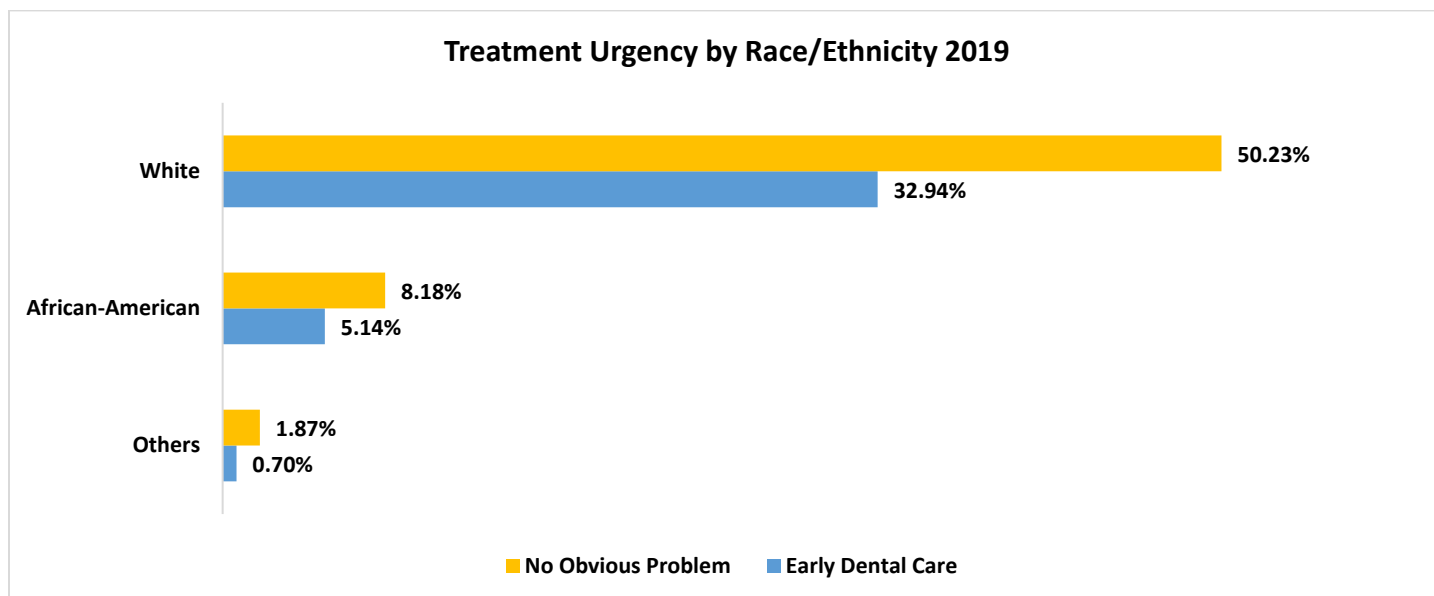




The following observations can be drawn out of Figure 14

1. In the year 2019, Males and Females of age group 21-30 that has the highest percentage of 'Early Dental Care' i.e. 6.54% and 5.37% respectively.
2. In the year 2019, Females of age group 21-30 (6.54%) and, Males of age group 31-40 (9.81%) have the highest percentage of 'No Obvious Problems'.
3. In the year 2020, Males and Females of age group 21-30 that has the highest percentage of 'Early Dental Care' i.e. 6.79% and 3.57% respectively.
4. In the year 2020, Females of age group 31-40 (6.43%) and, Males of age group 31-40 (9.29%) have the highest percentage of 'No Obvious Problems'.

FIGURE 15: TREATMENT URGENCY BY RACE/ETHNICITY



The graph for the year 2019 and the years 2020 shows that 'White' has the highest percentage of Early Dental Care followed by 'African- American'. No Obvious Problems in 'White' participants increased from 2019 to 2020 whereas, the percentage of Early Dental Care decreased.

ELKS DATA REPORT- HISTORY OF RAMPANT CARIES

TABLE 6: HISTORY OF RAMPANT CARIES BY GENDER

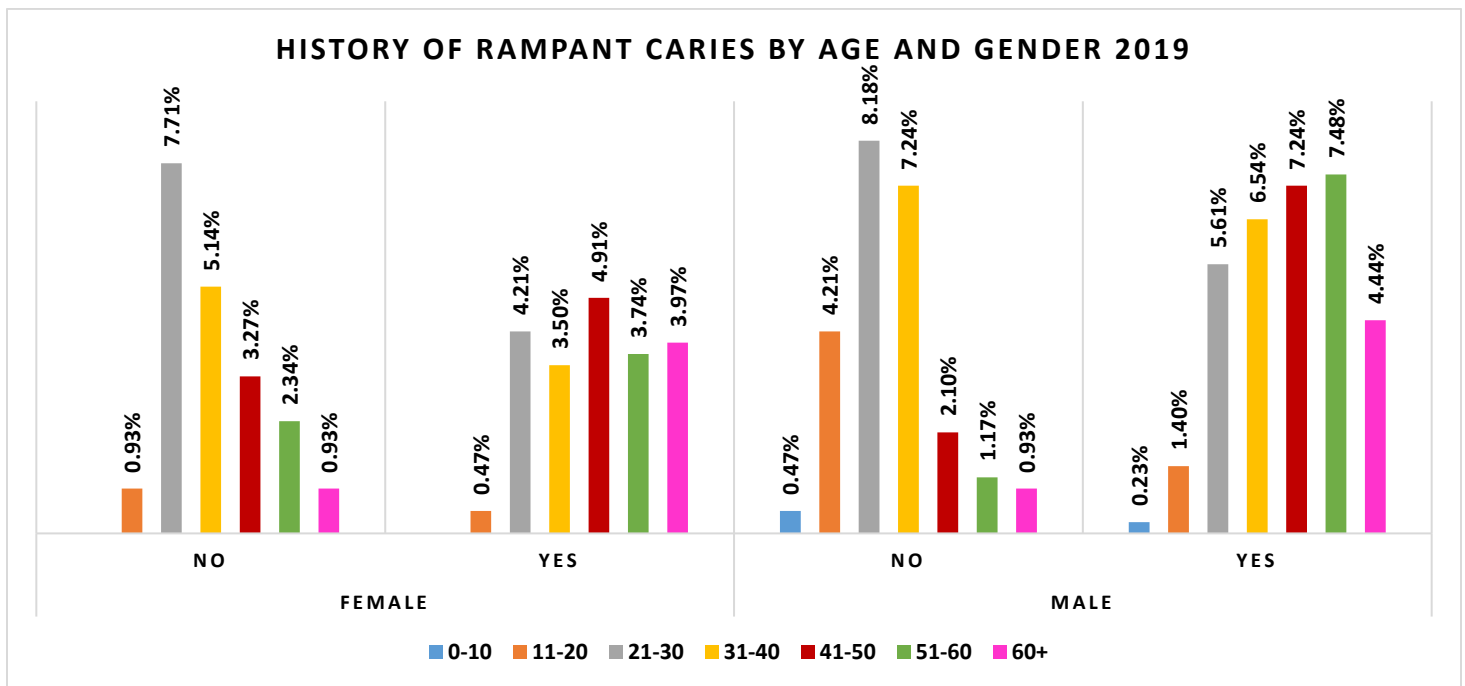
(Table 11 for year 2019 1.63% of the data as 'Not Specified' i.e. there is no specific information for these fields, this data has been removed for better visualization purposes but have been included during calculations performed)

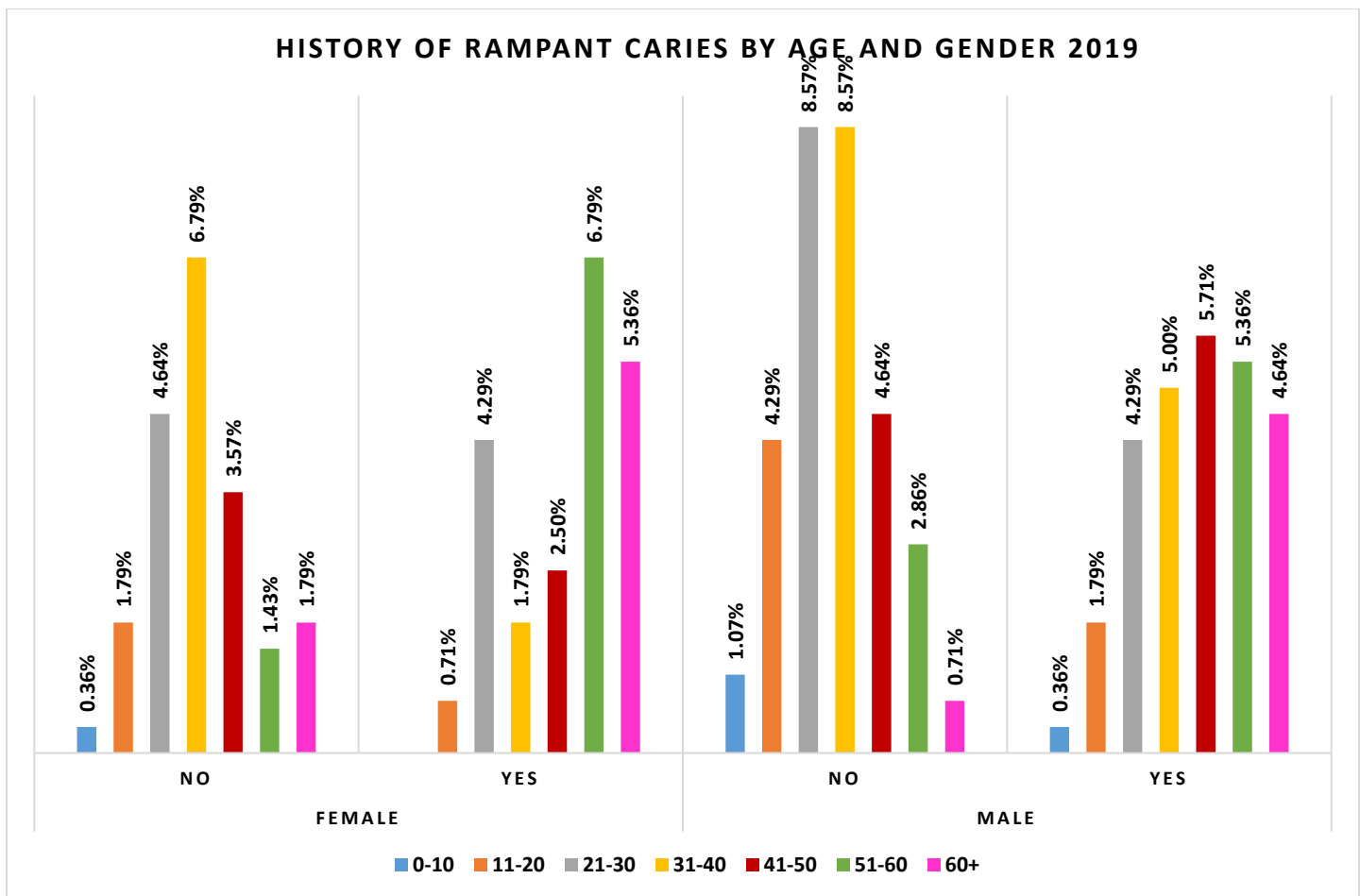
Gender 2019	History of Rampant Caries	Number of Rampant Caries	Percentage of Rampant Caries
Female	No	87	20.33%
	Yes	89	20.79%
Male	No	104	24.30%
	Yes	141	32.94%

Gender 2020	History of Rampant Caries	Number of Rampant Caries	Percentage Rampant Caries
Female	No	57	20.36%
	Yes	60	21.43%
Male	No	86	30.71%
	Yes	76	27.14%

The table above shows the total number of participants in each of the categories and the percentage representation on the total number of participants surveyed (CY 2019 = 428 and CY 2020 = 280).

FIGURE 16: HISTORY OF RAMPANT CARIES BY AGE AND GENDER



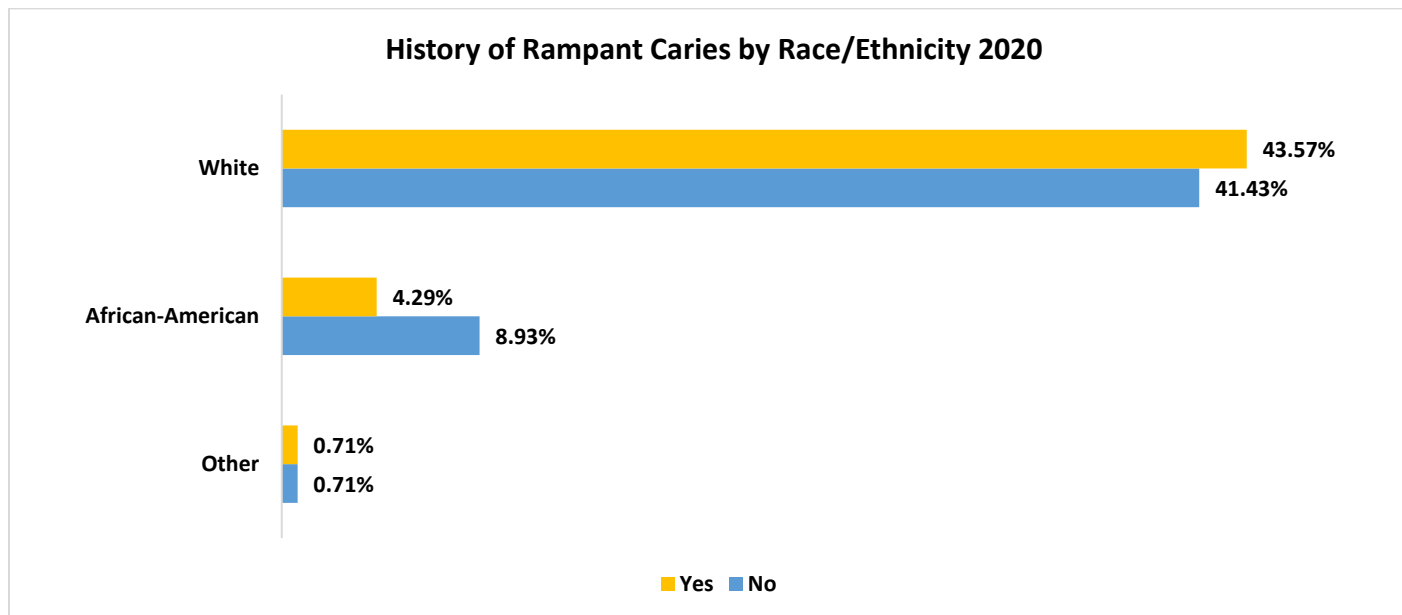
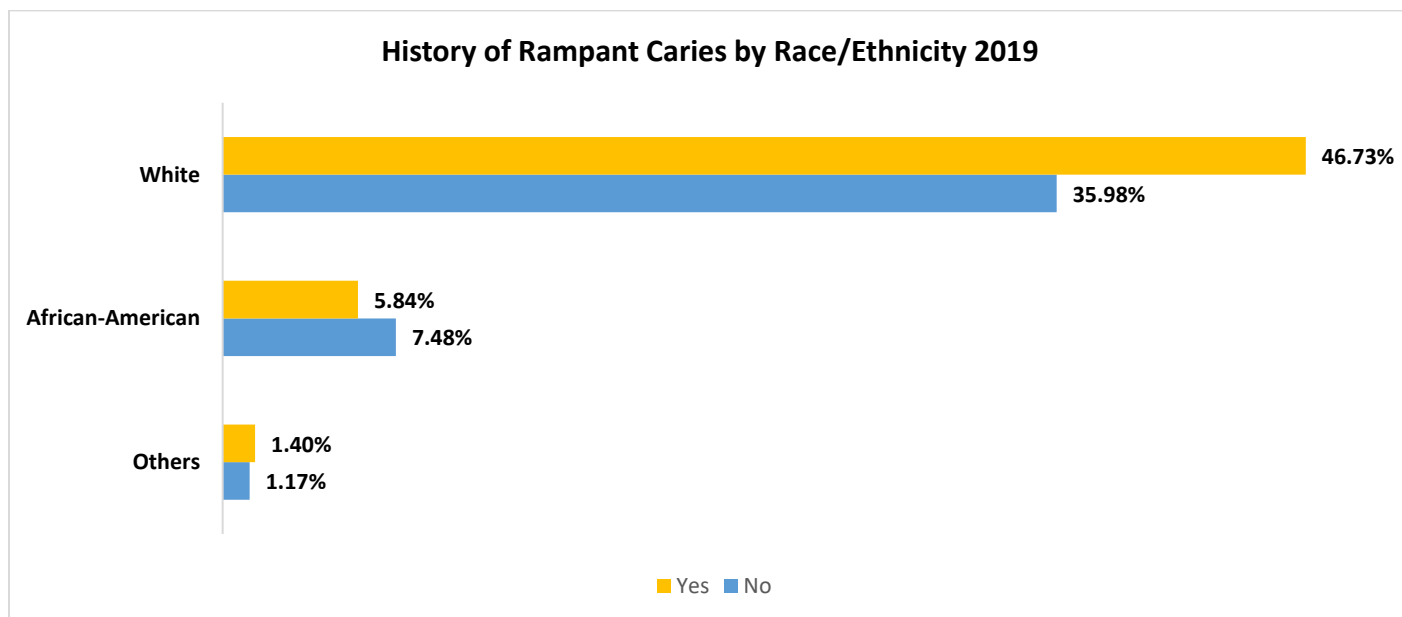


History of Rampant caries comprises of two values in the data set, 'Yes' and 'No'. According to which, if there is a history of rampant caries, it is marked as 'Yes' otherwise.

The following observations can be made from Figure 16:

1. In the year 2019, the highest percentage of 'History of Rampant Caries' can be seen in the Females of age group 41-50 (4.91%) and Males of age group 51-60 (7.48%).
2. In the year 2019, the highest percentage of 'History of Rampant Caries' can be seen in the Females of age group 41-50 (4.91%) and Males of age group 51-60 (7.48%).

FIGURE 17: HISTORY OF RAMPANT CARIES BY RACE/ETHNICITY



Whites show the highest percentage of participants that have a 'History of Rampant Caries' for both the years. For the year 2020 (43.57%) the participants that have a History of Rampant Caries have a lower percentage than the ones for the year 2019 (46.73%).

ELKS DATA REPORT- KEY TAKEAWAYS

Listed below are some essential points that can be concluded based on the data:

- 'Male' holds the highest percentage of participation than 'Female' does. The difference between participation percentages of the two genders is 16.12% for the year 2019 and 15.72% for the year 2020.
- There were no 'Female' participants of the age group 0-10 for the year 2019. 'Female' of age group 21-30 and 'Male' of age group 21-30 and 31-40 have the highest percentage of participants for the year 2019. Also, 'Female' of age group 21-30 and 'Male' of age group 31-40 have the highest percentage of participants for the year 2020.
- 'Female' of the year 2019 has a lower percentage of 'Satisfactory' oral hygiene than 'Male' by 3.97%. Also, for the year 2020, 'Female' have a lower percentage of 'Satisfactory' oral hygiene than 'Male' by 5.36%.
- 'Female' (15.82%) of age group 21-30 and 'Male' (14.29%) of age group 31-40 has the highest percentage of 'Satisfactory' oral hygiene for the year 2019. Whereas, for the year 2020, 'Female' (10.07%) of age group 51-60 and 'Male' (12.23%) of 21-30 have the highest percentage of 'Satisfactory' oral hygiene.
- Sealants could be seen in the 'Female' of age 21-30 and 'Male' of age group 11-20 and 21-30 for the year 2019. For the year 2020, both 'Female' and 'Male' of age group 11-20 have dental sealants.
- In the year 2020, there were no records of participants that have sealants for the 'African American' race.
- For the year 2019, 'Female' of age 21-30 and 41-50 and 'Males' of 31-40 have the highest 'Permanent Only' participants for 'Treated Decay'. Similarly, for the year 2020, 'Female' of age group 51-60 and 'Male' of the age group 21-30 and 31-40 have the highest percentage of 'Permanent Only' participants for 'Treated Decay'.
- The percentage of male participants of age group 21-30 accounts for 1.40% higher than female participants of the same age group for 'Permanent Only' of Untreated Decay for the year 2019 and 3.22% higher for the year 2020 of the same age group for both the genders.
- The percentage of 'White' in the year 2019 was 4.73% higher for 'Early Dental Care' under Treatment Urgency than in the year 2020.
- The percentage of 'White' participants for the year 2019 was 3.16% higher than those for the year 2020 that have 'History of Rampant Caries'.

APPENDIX

FIGURE 18: PARTICIPANTS FOR THE YEAR 2019

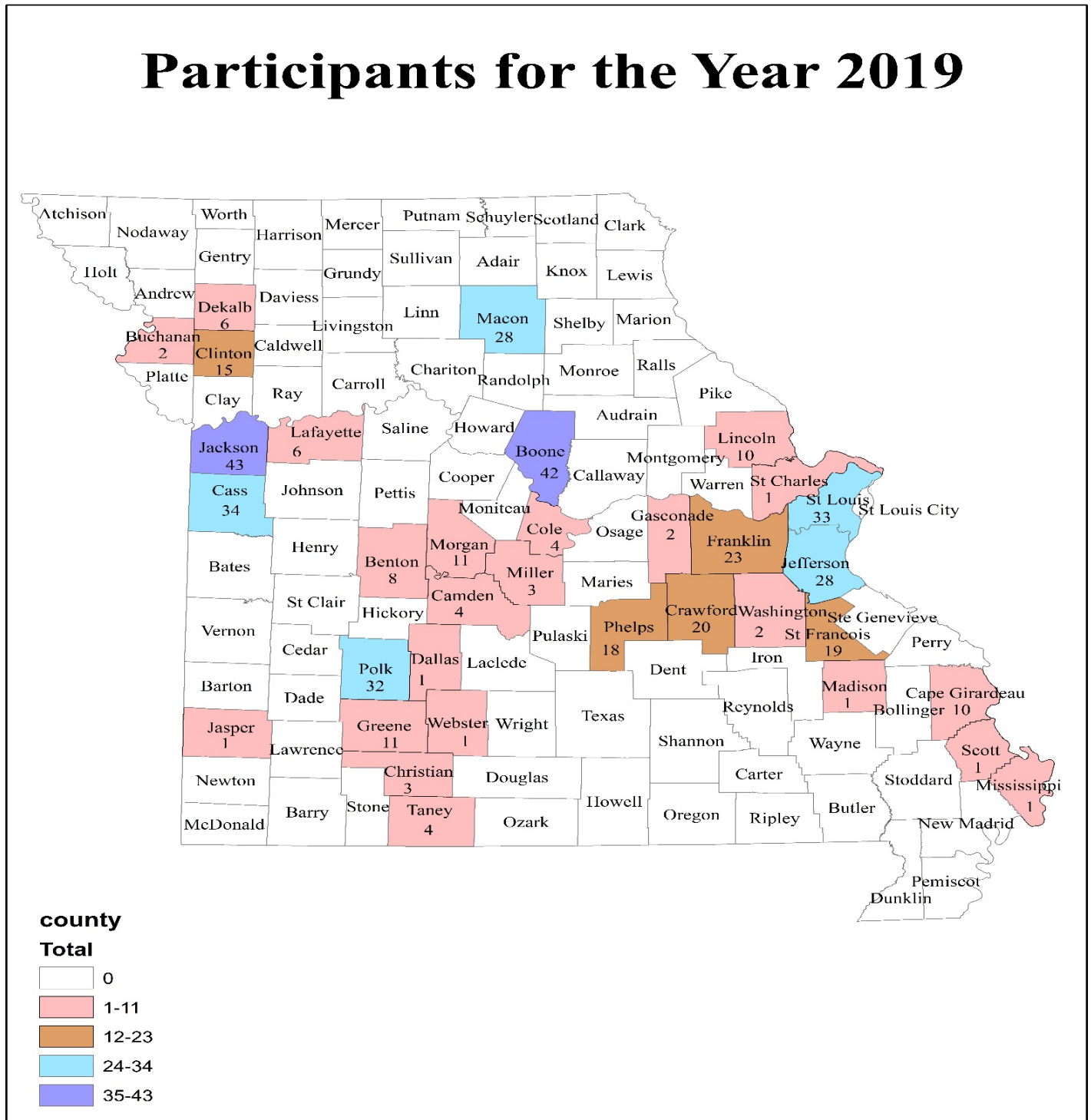
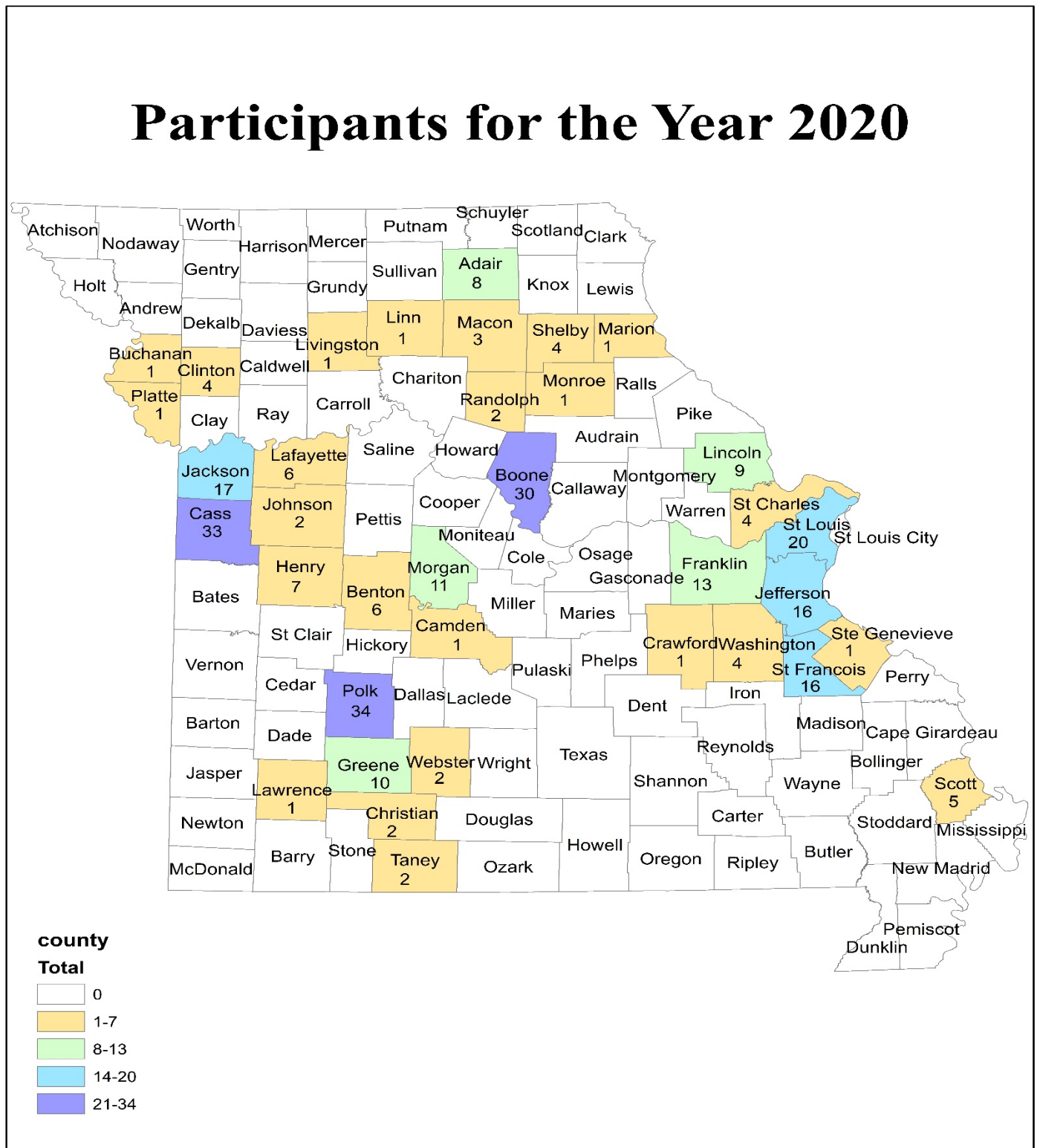


FIGURE 19: PARTICIPANTS FOR THE YEAR 2020



REFERENCE

¹Missouri Disability Status Report 2016. Report was published in 2018 by Cornell University and retrieved from this site https://www.disabilitystatistics.org/StatusReports/2016-PDF/2016-StatusReport_MO.pdf?CFID=6674002&CFTOKEN=dd2873fc88422a59-B2B91D7A-F249-9AB2-BE0525A1955F95CA#:~:text=Gender%3A%20In%202016%2C%2014.5%20percent,in%20MO%20reported%20a%20disability.

